STIC Search Report
EIC 1700

STIC Database Tracking Number: 130871

TO:	From:
Greg Delcotto **Location: REM 9A39** **Art Unit : 1751** **March 6, 2006** **Case Serial Number: 10/616775**	**Mei Huang** **Location: EIC 1700** **REMSEN 4B28** **Phone: 571/272-3952** **Mei.huang@uspto.gov**

Search Notes

Examiner Delcotto,

- 15 answers retrived on the combination of structure+hypochlorite compounds and utility terms, page 6-41.
- 40 answers retrived on the the structure+hypochlorite compounds w/o utility terms, page 41-112.

If you have any questions or if you would like to refine the search query, please feel free to contact me.

Thank you for using STIC services!

Mei Huang

Access DB# 180871

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: GREG DELCOTTO Examiner #: 72268 Date: 2/27/06
Art Unit: 1751 Phone Number ~~30~~ 272-1312 Serial Number: 10/616,775
Mail Box and Bldg/Room Location: 9A39 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: STABILISED LIQUID COMPOSITIONS CONTAINING ACTIVE CHLORINE

Inventors (please provide full names): ANDREA ZANARDI, ITALO ACCARDI

Earliest Priority Filing Date: 7/30/02

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

- PLEASE SEARCH ALL CLAIMS

*SEE ATTACHED

THANK YOU !!

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: MRH	NA Sequence (#)		STN	✓
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	2	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic		Dr.Link	
Date Completed: 3/6/06	Litigation		Lexis/Nexis	
Searcher Prep & Review Time:	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time:	Other		Other (specify)	

PTO-1590 (8-01)

PLEASE AMEND THE CLAIMS AS FOLLOWS:

1. and 2. (Cancelled)

3. (Currently Amended) Method as claimed in claim ~~2~~ 18 wherein groups R_1, R_2, R_3 and R_4 represent methyl.

4. (Currently Amended) Method as claimed in claim ~~2~~ 18 wherein X_1 represents oxygen, X_2 is hydrogen, X_3 is OH and groups R_1, R_2, R_3 and R_4 represent methyl.

5. (Cancelled)

6. (Currently Amended) Method as claimed in ~~claims 1-5~~ Claim ~~1~~ 18 wherein said liquid compositions containing active chlorine are thickened with a soluble or water-dispersible polymer selected from homo- or co-polymers of acrylic acid or homo- or co-polymers of cross-linked acrylic acid.

7-8. (Cancelled)

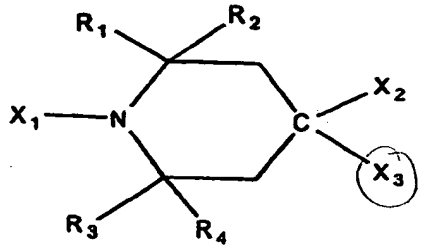
9. (Currently Amended) Method as claimed in ~~claims 1 to 5~~ Claim ~~1~~ 18 wherein the amount active chlorine is between 0.5-10% by weight and the amount of stabilizer is between 0.005% and 3% by weight

10-16. (Cancelled)

17. (New) A liquid detergent composition for domestic and industrial cleaning containing an alkali or alkaline earth hypochlorite stabilized according to the method of Claim 18.

18. (New) Method for stabilizing the viscosity and/or the active chlorine content of a liquid composition containing alkali or alkaline earth hypochlorites comprising the addition to said composition of 0.001% to 5% of a compound belonging to the class of hindered amines of the general formula (I)

Formula I



wherein R_1, R_2, R_3 and R_4, which may be the same or different, represent methyl or ethyl; X_1 represents an oxygen atom, an -OH group or an OR_5 group, wherein R_5 represents linear or branched alkyl C_1-C_4 or cyclohexyl; X_2 represents hydrogen and X_3 represents the groups -OH or -NHR_5, wherein R_5 has the meaning described above; or X_2 and X_3, taken together, represent an oxygen atom.

STIC Search Results Feedback Form

USPTO

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact*:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art **found**, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found**:*
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

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DICTIONARY FILE UPDATES:   5 MAR 2006  HIGHEST RN 875875-45-9

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* available and contains the CA role and document type information.     *
*                                                                       *
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(FILE 'HOME' ENTERED AT 11:16:51 ON 06 MAR 2006)

FILE 'HCAPLUS' ENTERED AT 11:17:00 ON 06 MAR 2006
E US20040023837/PN
L1 1 SEA US2004023837/PN
SEL RN

FILE 'REGISTRY' ENTERED AT 11:18:15 ON 06 MAR 2006
L2 12 SEA (13598-36-2/BI OR 138789-85-2/BI OR 14380-61-1/BI OR
L3 1 SEA 7681-52-9/RN

FILE 'HCAPLUS' ENTERED AT 11:43:35 ON 06 MAR 2006
L4 10991 SEA L3
L5 391126 SEA SURFACT? OR DETERG? OR (SURFACE(W)ACTIVE# OR WETTING#)(A)(AGENT? OR ADDITIVE? OR COMPOUND? OR COMPD# OR CMPD# OR CPD#) OR EMULSIFIER? OR DISPERSANT?
L6 639057 SEA CLEAN? OR LAUND? OR RINS? OR DETERS? OR ABSTERS? OR EDULCORAT? OR SANIT? OR HYGIEN? OR DISINFECT? OR DECONTAMINA? OR STERILI? OR ABLUT? OR ELUTION# OR ELUTRIAT? OR SCRUB? OR SCOUR? OR DEGREAS? OR LIXIV?
L7 1603 SEA (ALK# OR ALKALI# OR ALKALINE#)(2A)HYPOCHLORITE#

FILE 'REGISTRY' ENTERED AT 11:59:42 ON 06 MAR 2006
L8 1 SEA "POTASSIUM HYPOCHLORITE"/CN
L9 1 SEA "LITHIUM HYPOCHLORITE (LICLO)"/CN
L10 1 SEA "MAGNESIUM HYPOCHLORITE"/CN
L11 1 SEA "CALCIUM HYPOCHLORITE"/CN
L12 1 SEA "STRONTIUM HYPOCHLORITE"/CN

FILE 'HCAPLUS' ENTERED AT 12:04:37 ON 06 MAR 2006
L13 10273 SEA SODIUM(W)HYPOCHLORITE#
L14 14713 SEA NAOCL OR NACLO
L15 744 SEA L8 OR POTASSIUM(W)HYPOCHLORITE# OR KOCL OR KCLO
L16 288 SEA L9 OR LITHIUM(W)HYPOCHLORITE# OR LIOCL OR LICLO
L17 2509 SEA L10 OR MAGNESIUM(W)HYPOCHLORITE# OR MG(W)CLO? OR MG(W)OCL?
L18 4703 SEA L11 OR CALCIUM(W)HYPOCHLORITE# OR CA(W)CLO? OR CA(W)OCL?
L19 190 SEA L12 OR STRONTIUM(W)HYPOCHLORITE# OR SR(W)CLO? OR SR(W)OCL?

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L20 STR
L21 STR L20
L22 50 SEA SSS SAM L21
L23 STR L20

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L24          38 SEA SSS SAM L23
L25         812 SEA SSS FUL L23
                STR L23
L27          37 SEA SUB=L25 SSS SAM L26
L28         806 SEA SUB=L25 SSS FUL L26
L29           1 SEA L2 AND L28
                SAV L28 DEL775AS/A

     FILE 'HCAPLUS' ENTERED AT 14:30:16 ON 06 MAR 2006
L30        2439 SEA L29
L31        3669 SEA L25 OR L28
L32        3669 SEA L30 OR L31
L33          53 SEA L32 AND (L4 OR L13 OR L14)
L34           8 SEA L33 AND (L5 OR L6)
L35           3 SEA L32 AND L15
L36           0 SEA L35 AND (L5 OR L6)
L37           1 SEA L32 AND L16
L38           0 SEA L37 AND (L5 OR L6)
L39           1 SEA L32 AND L17
L40           0 SEA L39 AND (L5 OR L6)
L41           5 SEA L32 AND L18
L42           1 SEA L41 AND (L5 OR L6)
L43           0 SEA L32 AND L19
L44           2 SEA L32 AND L7
L45          15 SEA L34 OR L35 OR L37 OR L39 OR L41 OR L42 OR L44
L46          40 SEA L33 NOT L45


=> d l45 que stat
L2           12 SEA FILE=REGISTRY (13598-36-2/BI OR 138789-85-2/BI OR
                14380-61-1/BI OR 2226-96-2/BI OR 2403-88-5/BI OR
                2782-57-2/BI OR 651353-92-3/BI OR 75760-37-1/BI OR
                7681-52-9/BI OR 7790-28-5/BI OR 79-10-7/BI OR 87-90-1/BI)

L3            1 SEA FILE=REGISTRY 7681-52-9/RN
L4        10991 SEA FILE=HCAPLUS L3
L5       391126 SEA FILE=HCAPLUS SURFACT? OR DETERG? OR (SURFACE(W)ACTIVE
                # OR WETTING#)(A)(AGENT? OR ADDITIVE? OR COMPOUND? OR
                COMPD# OR CMPD# OR CPD#) OR EMULSIFIER? OR DISPERSANT?
L6       639057 SEA FILE=HCAPLUS CLEAN? OR LAUND? OR RINS? OR DETERS? OR
                ABSTERS? OR EDULCORAT? OR SANIT? OR HYGIEN? OR DISINFECT?
                 OR DECONTAMINA? OR STERILI? OR ABLUT? OR ELUTION# OR
                ELUTRIAT? OR SCRUB? OR SCOUR? OR DEGREAS? OR LIXIV?
L7         1603 SEA FILE=HCAPLUS (ALK# OR ALKALI# OR ALKALINE#)(2A)HYPOCH
                LORITE#
L8            1 SEA FILE=REGISTRY "POTASSIUM HYPOCHLORITE"/CN
L9            1 SEA FILE=REGISTRY "LITHIUM HYPOCHLORITE (LICLO)"/CN
L10           1 SEA FILE=REGISTRY "MAGNESIUM HYPOCHLORITE"/CN
L11           1 SEA FILE=REGISTRY "CALCIUM HYPOCHLORITE"/CN
L13       10273 SEA FILE=HCAPLUS SODIUM(W)HYPOCHLORITE#
L14       14713 SEA FILE=HCAPLUS NAOCL OR NACLO
L15         744 SEA FILE=HCAPLUS L8 OR POTASSIUM(W)HYPOCHLORITE# OR KOCL
                OR KCLO
L16         288 SEA FILE=HCAPLUS L9 OR LITHIUM(W)HYPOCHLORITE# OR LIOCL
                OR LICLO
L17        2509 SEA FILE=HCAPLUS L10 OR MAGNESIUM(W)HYPOCHLORITE# OR
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MG(W)CLO? OR MG(W)OCL?
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CA(W)CLO? OR CA(W)OCL?
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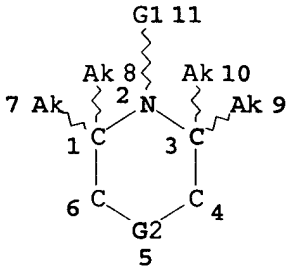


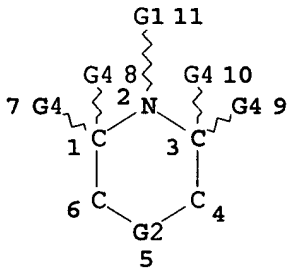
O~Ak @12 13 O~Cb @14 15 C=O @16 17 C~OH @20 21

C~NH~G3 @18 19 22 Ak @23 Cb @24

VAR G1=O/OH/12/14
VAR G2=16/18/20
VAR G3=23/24
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 7
CONNECT IS E1 RC AT 8
CONNECT IS E1 RC AT 9
CONNECT IS E1 RC AT 10
CONNECT IS E1 RC AT 13
CONNECT IS E1 RC AT 23
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 7
GGCAT IS SAT AT 8
GGCAT IS SAT AT 9
GGCAT IS SAT AT 10
GGCAT IS SAT AT 13
GGCAT IS MCY SAT AT 15
GGCAT IS SAT AT 23
GGCAT IS MCY SAT AT 24
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M1-X4 C AT 7
ECOUNT IS M1-X4 C AT 8
ECOUNT IS M1-X4 C AT 9
ECOUNT IS M1-X4 C AT 10
ECOUNT IS M1-X4 C AT 13
ECOUNT IS E6 C AT 15
ECOUNT IS M1-X4 C AT 23
ECOUNT IS E6 C AT 24

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE
L25 812 SEA FILE=REGISTRY SSS FUL L23
L26 STR



O~Ak @12 13 O~Cb @14 15 C=O @16 17 C~OH @20 21

C~NH~G3 @18 19 22 Ak @23 Cb @24

VAR G1=O/OH/12/14
VAR G2=16/18/20
VAR G3=23/24
VAR G4=ME/ET
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 13
CONNECT IS E1 RC AT 23
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 13
GGCAT IS MCY SAT AT 15
GGCAT IS SAT AT 23
GGCAT IS MCY SAT AT 24
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M1-X4 C AT 13
ECOUNT IS E6 C AT 15
ECOUNT IS M1-X4 C AT 23
ECOUNT IS E6 C AT 24

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L28	806	SEA FILE=REGISTRY SUB=L25 SSS FUL L26
L29	1	SEA FILE=REGISTRY L2 AND L28
L30	2439	SEA FILE=HCAPLUS L29
L31	3669	SEA FILE=HCAPLUS L25 OR L28
L32	3669	SEA FILE=HCAPLUS L30 OR L31
L33	53	SEA FILE=HCAPLUS L32 AND (L4 OR L13 OR L14)
L34	8	SEA FILE=HCAPLUS L33 AND (L5 OR L6)
L35	3	SEA FILE=HCAPLUS L32 AND L15
L37	1	SEA FILE=HCAPLUS L32 AND L16
L39	1	SEA FILE=HCAPLUS L32 AND L17
L41	5	SEA FILE=HCAPLUS L32 AND L18
L42	1	SEA FILE=HCAPLUS L41 AND (L5 OR L6)
L44	2	SEA FILE=HCAPLUS L32 AND L7
L45	15	SEA FILE=HCAPLUS L34 OR L35 OR L37 OR L39 OR L41 OR L42 OR L44

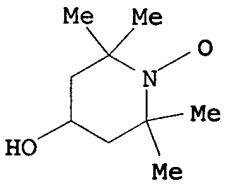
=> d 145 ibib abs hitstr hitind 1-15

L45 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1324583 HCAPLUS
TITLE: **Clean** and selective oxidation of alcohols catalyzed by ion-supported TEMPO in water
AUTHOR(S): Qian, Weixing; Jin, Erlei; Bao, Weiliang; Zhang, Yongmin
CORPORATE SOURCE: Department of Chemistry, Xi Xi Campus, Zhejiang University, Zhejiang, Hangzhou, 310028, Peop. Rep. China
SOURCE: Tetrahedron (2006), 62(4), 556-562
CODEN: TETRAB; ISSN: 0040-4020
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Three different types of ion-supported TEMPO catalysts are synthesized and their catalytic activity in the chemoselective oxidn. of alcs. is investigated. These new catalysts show high catalytic activity in water and can be reused for the next run by extn. of products. Recycling expts. exhibit that ion-supported TEMPO can be reused up to five times without loss of catalytic activity. This system offers a very **clean**, convenient, environmentally benign method for the selective oxidn. of alcs. The catalysts prepd. for this study included 4-[4-(3-methyl-1-imidazolium)butoxy]-supported TEMPO tetrafluoroborate, 4-[1-oxo-2-(3-methyl-1-imidazolium)ethoxy]-supported TEMPO tetrafluoroborate, and a dimer deriv. The most efficient oxidizing agent was an ionic liq.-supported hypervalent iodine reagent, i.e., bis(acetato-κO)[4-[(3-methyl-1H-imidazolium-1-yl)methyl]phenyl]iodine(1+) tetrafluoroborate.

IT **2226-96-2**, 4-hydroxy-TEMPO
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ion-supported TEMPO as catalyst and water as solvent)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9**, **Sodium hypochlorite** (**NaOCl**)
RL: RGT (Reagent); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst and water as solvent)

RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 23, 28, 24
IT Alcohols
RL: RCT (Reactant); RACT (Reactant or reagent)
(aliph.; prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and bis(acetato)[imidazolium-1-yl)methyl]phenyl]iodine tetrafluoroborate as oxidizing agent)
IT Aldehydes
RL: SPN (Synthetic preparation); PREP (Preparation)
(aliph.; prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and bis(acetato)[imidazolium-1-yl)methyl]phenyl]iodine tetrafluoroborate as oxidizing agent)
IT Aldehydes
RL: SPN (Synthetic preparation); PREP (Preparation)
(arom.; prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and bis(acetato)[imidazolium-1-yl)methyl]phenyl]iodine tetrafluoroborate as oxidizing agent)
IT Alcohols
RL: RCT (Reactant); RACT (Reactant or reagent)
(benzyl; prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and bis(acetato)[imidazolium-1-yl)methyl]phenyl]iodine tetrafluoroborate as oxidizing agent)
IT Oxidation
(chemoselective; prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst and water as solvent)
IT Green chemistry
Ionic liquids
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst and water as solvent)
IT Alcohols
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst and water as solvent)
IT Aldehydes
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst and water as solvent)

IT Ketones
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst and water as solvent)

IT Oxidizing agents
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and bis(acetato)[imidazolium)methyl]phenyl]iodine tetrafluoroborate as oxidizing agent)

IT Alcohols
RL: RCT (Reactant); RACT (Reactant or reagent)
(secondary; prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and bis(acetato)[imidazolium-1-yl)methyl]phenyl]iodine tetrafluoroborate as oxidizing agent)

IT 875757-05-4P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using [(imidazolium)butoxy]-supported TEMPO (dimer) as catalyst and water as solvent)

IT 288-32-4, 1H-Imidazole
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using [(imidazolium)butoxy]-supported TEMPO (dimer) as catalyst and water as solvent)

IT 875757-02-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using [(imidazolium)butoxy]-supported TEMPO as catalyst and water as solvent)

IT 616-47-7, 1-Methylimidazole
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using [(imidazolium)butoxy]-supported TEMPO as catalyst and water as solvent)

IT 875757-06-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using [(imidazolium)butoxy]-supported TEMPO as catalyst and water as solvent)

IT 875757-03-2P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using [oxo(imidazolium)ethoxy]-supported TEMPO as catalyst and water as solvent)

IT 79-04-9, Chloroacetyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using [oxo(imidazolium)ethoxy]-supported TEMPO as catalyst and water as solvent)

IT 851233-40-4P 875757-07-6P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using [oxo(imidazolium)ethoxy]-supported TEMPO as catalyst and water as solvent)

IT 110-52-1, 1,4-Dibromobutane **2226-96-2**, 4-hydroxy-TEMPO
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ion-supported TEMPO as catalyst and water as solvent)

IT 184946-34-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ion-supported TEMPO as catalyst and water as solvent)

IT 79-21-0, Peracetic acid 3240-34-4, Bis(acetato-κO)phenyl-iodine 7553-56-2, Iodine **7681-52-9**, **Sodium hypochlorite (NaOCl)**
RL: RGT (Reagent); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst and water as solvent)

IT 98-00-0, 2-Furanylmethanol 98-85-1, α-Methylbenzenemethanol 100-51-6, Benzyl alcohol 104-54-1, Cinnamyl alcohol 105-13-5, 4-Methoxybenzyl alcohol 111-27-3, 1-Hexyl alcohol 122-97-4, Benzenepropanol 492-70-6, Dihydrobenzoin 556-48-9, 1,4-Dihydroxycyclohexane 589-91-3, 4-Methylcyclohexanol 626-93-7, 2-Hydroxyhexane 873-76-7, 4-Chlorobenzyl alcohol 3319-15-1, 4-Methoxy-α-methylbenzenemethanol 5391-88-8, 4-Bromo-α-methylbenzenemethanol 15852-63-8, Ethyl 4-(hydroxymethyl)benzoate
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and bis(acetato)[imidazolium)methyl]phenyl]iodine tetrafluoroborate as oxidizing agent)

IT 66-25-1P, Hexanal 98-01-1P, Furfural 98-86-2P, Acetophenone 99-90-1P 100-06-1P 100-52-7P, Benzaldehyde 104-53-0P, 3-Phenylpropanal 104-55-2P, Cinnamyl aldehyde 104-88-1P, 4-Chlorobenzaldehyde 119-53-9P, Benzoin 123-11-5P, 4-Methoxybenzaldehyde 589-92-4P, 4-Methylcyclohexanone 591-78-6P, Methyl butyl ketone 6287-86-1P, Ethyl 4-(formyl)benzoate 13482-22-9P, 4-Hydroxycyclohexanone
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and bis(acetato)[imidazolium)methyl]phenyl]iodine tetrafluoroborate as oxidizing agent)

IT 848890-66-4
RL: RGT (Reagent); RACT (Reactant or reagent)
(prepn. of aldehydes and ketones via **clean**, chemoselective oxidn. of alcs. using ionic liq.-supported TEMPO as catalyst, water as solvent and ionic liq.-supported hypervalent iodine as oxidizing agent)

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1031858 HCAPLUS
DOCUMENT NUMBER: 142:6014
TITLE: Bromine free TEMPO based catalyst system for oxidation of primary and secondary alcohols using NaOCl as an oxidant
INVENTOR(S): Prakash, Indra; Tanielyan, Setrak K.; Augustine, Robert L.; Furlong, Kenneth E.; Scherm, Robert C.; Jackson, Handley E.
PATENT ASSIGNEE(S): The Nutrasweet Company, USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

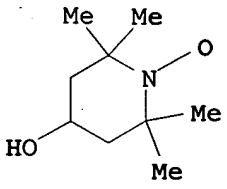
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6825384	B1	20041130	US 2004-767805	20040129
PRIORITY APPLN. INFO.:			US 2004-767805	20040129

OTHER SOURCE(S): CASREACT 142:6014; MARPAT 142:6014

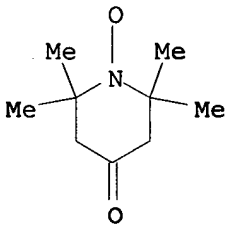
AB The present invention relates to a process of oxidn. of alcs. selectively to aldehydes or ketones with NaOCl using a 2,2,6,6-tetramethylpiperidinyloxy (TEMPO)-borate (Na2B4O7) catalyst system. It is shown that the oxidn. can be efficiently carried out without KBr additives under solvent free conditions. Aldehydes such as 3,3-dimethylbutyraldehyde can be produced efficiently using the present invention. Thus, 16.9 g 3,3-dimethyl-1-butanol (117.3 mmol) and 0.0765 g MeO-TEMPO (0.411 mmol) were charged in a jacketed glass reaction flask and treated with a soln. of NaOCl (0.380 g, 1.0 mmol) and 0.676 g NaHCO3 in 17 cc H2O under stirring. The stirred suspension was cooled to 0° and the emulsion was readjusted to pH = 8.4 using 50% AcOH. When the temp. of the reactants reached 0°, 77.5 g (126 mmol) 12.1% aq. NaOCl soln. was pumped in via a gastight syringe over 90 min wherein the pH of the bleach soln. was adjusted to 10 using 50% aq. AcOH. During the bleach addn., the pH was maintained at 8.3-8.4 levels using few drops of 50% aq. AcOH. The reaction mixt. was stirred for an addnl. 120 min at 0° while the reaction in this second stage was kept at pH 8.4 by addn. of 0.2-0.25 cc 50% aq. NaOH. The yield of 3,3-dimethylbutyraldehyde was 94.0% at 60 min and 96.0 % at 90 min reaction time.

IT **2226-96-2**, 4-Hydroxy-TEMPO **2896-70-0**, 4-Oxo-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(bromine free TEMPO-borate catalyst system for oxidn. of primary and secondary alcs. to aldehydes and ketones using sodium hypochlorite as oxidant)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **7778-54-3, Calcium hypochlorite**
7778-66-7, Potassium hypochlorite
RL: RGT (Reagent); RACT (Reactant or reagent)
(bromine free TEMPO-borate catalyst system for oxidn. of primary and secondary alcs. to aldehydes and ketones using sodium hypochlorite as oxidant)
RN 7778-54-3 HCAPLUS
CN Hypochlorous acid, calcium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

●1/2 Ca

RN 7778-66-7 HCAPLUS
CN Hypochlorous acid, potassium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● K

IC ICM C07C045-29
ICS C07C045-30
INCL 568402000; 568407000; 568471000; 568472000
CC 21-2 (General Organic Chemistry)
Section cross-reference(s): 23, 25
IT 1330-43-4, Sodium borate **2226-96-2**, 4-Hydroxy-TEMPO
2564-83-2, TEMPO **2896-70-0**, 4-Oxo-TEMPO 3225-26-1
3227-63-2, Zirconium diacetate 5153-24-2, Bis(acetato)oxozirconium
6599-87-7 7758-02-3, Potassium bromide, uses 12192-25-5, Titanyl (TiO2+) 12258-53-6, Borate (B4O72-) 12298-97-4, Zirconyl ion
14066-20-7, Dihydrogen phosphate ion, uses 14259-85-9
14311-52-5, Tungstate (WO42-) 14691-88-4, 4-Amino-TEMPO
14691-89-5, 4-Acetamido-TEMPO 16984-32-0, Molybdenyl ion (MoO2+)
20644-97-7, Vanadyl (VO2+) 23325-30-6, Tungstyl ion(2+)
34021-34-6, Chromyl ion(2+) 71335-68-7 85835-69-4, Vanadate (VO32-) 91993-31-6 95407-69-5, 4-Methoxy-TEMPO 123373-68-2
RL: CAT (Catalyst use); USES (Uses)
(bromine free TEMPO-borate catalyst system for oxidn. of primary and secondary alcs. to aldehydes and ketones using sodium hypochlorite as oxidant)
IT 75-91-2, tert-Butyl hydroperoxide 79-21-0, Peracetic acid
87-90-1, Trichloroisocyanuric acid 107-32-4, Performic acid
127-09-3, Sodium acetate 144-55-8, Sodium bicarbonate, reactions
298-14-6, Potassium bicarbonate 359-48-8, Trifluoroperacetic acid
497-19-8, Sodium carbonate, reactions 584-08-7, Potassium carbonate 7558-79-4, Disodium hydrogen phosphate 7558-80-7, Sodium dihydrogen phosphate 7681-52-9, Sodium hypochlorite
7722-84-1, Hydrogen peroxide, reactions 7758-11-4, Dipotassium hydrogen phosphate 7758-19-2, Sodium chlorite 7778-53-2, Potassium phosphate **7778-54-3**, **Calcium hypochlorite 7778-66-7**, **Potassium hypochlorite** 7778-77-0, Potassium dihydrogen phosphate
7796-16-9, Trichloroperacetic acid
RL: RGT (Reagent); RACT (Reactant or reagent)
(bromine free TEMPO-borate catalyst system for oxidn. of primary and secondary alcs. to aldehydes and ketones using sodium hypochlorite as oxidant)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:648490 HCAPLUS
DOCUMENT NUMBER: 141:190314
TITLE: Bromine-free, borate/TEMPO-based catalyst system for oxidation of primary and secondary alcohols to aldehydes and ketones, using sodium hypochlorite (NaOCl) as an oxidant.
INVENTOR(S): Tanielyan, Setrak K.; Augustine, Robert L.; Prakash, Indra; Furlong, Kenneth E.; Scherm, Robert C.; Jackson, Handley E.
PATENT ASSIGNEE(S): The Nutrasweet Company, USA
SOURCE: PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004067484	A2	20040812	WO 2004-US2475	20040129
WO 2004067484	A3	20041118		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
EP 1590312	A2	20051102	EP 2004-706453	20040129
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRIORITY APPLN. INFO.:			US 2003-443749P P	20030130
			WO 2004-US2475 W	20040129

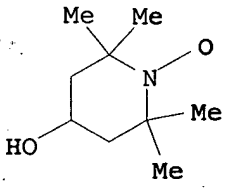
OTHER SOURCE(S): CASREACT 141:190314; MARPAT 141:190314

AB The invention relates to a process for oxidn. of alcs. selectively to aldehydes or ketones with NaOCl, using a TEMPO-borate catalyst system. The oxidn. can be efficiently carried out without KBr additives under solvent-free conditions. The method is highly efficient, economical, and does not require org. solvents, although several preferred solvents which can be used are disclosed. The method uses environmentally friendly oxidants, and does not require the use of bromine-based catalysts. Aldehydes such as 3,3-dimethylbutyraldehyde (I) can be produced efficiently. For instance, an aq. soln. of Na2B4O7 and NaHCO3 was added with stirring at 1000 rpm to a mixt. of 3,3-dimethyl-1-butanol and 4-methoxy-TEMPO catalyst. The suspension was cooled to 0° and adjusted to pH 8.4 with 50% AcOH. Then, a slight excess of aq. 12.1% NaOCl soln., pre-adjusted to pH 10, was added over 90 min, while maintaining the reaction pH at 8.3-8.4 with aq. AcOH. The mixt. was stirred for an addnl. 120 min at 0° with sampling, showing a 94% yield of I at 60 min, and 96% yield of I at 90 min. Yields of I by the invention method reached as high as 99%, and several other alcs. were oxidized to aldehydes in 90-100% yield. Simultaneous use of KBr and Na2B4O7 as cocatalysts gave no improvement in the yield of I. However, the absence of any cocatalyst reduced yields of I to 67%. In further contrast, a lit. method using KBr alone gave only 91% yield at 60 min, and a scaled-up, optimized procedure using KBr alone still gave only 89.7% yield of I at 60 min, and 91.5% at 90 min. Finally, oxidn. of 1-heptanol using over 2 equiv NaOCl yielded 83% heptanoic acid. A cascade mechanism for the oxidn. is

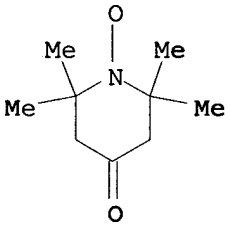
described.

IT **2226-96-2**, 4-Hydroxy-TEMPO **2896-70-0**, 4-Oxo-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(catalyst; borate/TEMPO catalyst for oxidn. of primary and secondary alcs. to aldehydes and ketones using sodium hypochlorite)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **7778-54-3, Calcium hypochlorite**
7778-66-7, Potassium hypochlorite
RL: RGT (Reagent); RACT (Reactant or reagent)
(oxidizing agent; borate/TEMPO catalyst for oxidn. of primary and secondary alcs. to aldehydes and ketones using sodium hypochlorite)

RN 7778-54-3 HCAPLUS
CN Hypochlorous acid, calcium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

●1/2 Ca

RN 7778-66-7 HCAPLUS
CN Hypochlorous acid, potassium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● K

IC ICM C07C
CC 21-2 (General Organic Chemistry)
Section cross-reference(s): 45
IT **2226-96-2**, 4-Hydroxy-TEMPO 2564-83-2, TEMPO 2564-83-2D, TEMPO, derivs. **2896-70-0**, 4-Oxo-TEMPO 3225-26-1, 4-Benzoyloxy-TEMPO 6599-87-7, 4-Acetoxy-TEMPO 14691-88-4, 4-Amino-TEMPO 14691-89-5, 4-Acetamino-TEMPO 71335-68-7, 4-(N,N-Dimethylamino)-TEMPO 71878-19-8, Chimassorb 944 95407-69-5, 4-Methoxy-TEMPO 123373-68-2, 4-Ethoxy-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(catalyst; borate/TEMPO catalyst for oxidn. of primary and secondary alcs. to aldehydes and ketones using sodium hypochlorite)
IT 75-91-2, tert-Butyl hydroperoxide 79-21-0, Peracetic acid 87-90-1, Trichloroisocyanuric acid 107-32-4, Performic acid 359-48-8, Trifluoroperacetic acid 7681-52-9, Sodium hypochlorite 7722-84-1, Hydrogen peroxide, reactions 7758-19-2, Sodium chlorite **7778-54-3**, **Calcium hypochlorite** **7778-66-7**, **Potassium hypochlorite** 7796-16-9, Trichloroperacetic acid
RL: RGT (Reagent); RACT (Reactant or reagent)
(oxidizing agent; borate/TEMPO catalyst for oxidn. of primary and secondary alcs. to aldehydes and ketones using sodium hypochlorite)

L45 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:159062 HCAPLUS
DOCUMENT NUMBER: 140:183644
TITLE: Stabilized liquid compositions containing active chlorine, thickener mixtures, stabilizing liquid compositions, and **detergents**
INVENTOR(S): Zanardi, Andrea; Accardi, Italo
PATENT ASSIGNEE(S): 3V Sigma S.P.A, Italy
SOURCE: Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1391501	A2	20040225	EP 2003-14351	200306 26
EP 1391501	A3	20040331		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,

PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

CA 2433903 AA 20040130 CA 2003-2433903 200306 30

PRIORITY APPLN. INFO.: IT 2002-MI1693 A 200207 30

OTHER SOURCE(S): MARPAT 140:183644

AB Liq. compns. contg. alkali or **alk.**-earth **hypochlorites**, and possibly other active Cl releasers such as trichlorocyanuric acid, dichlorocyanuric acid and its alkali salts, with special ref. to those used for bleaching and **sanitizing** fabrics and surfaces.

IT **7681-52-9**, **Sodium hypochlorite**
RL: TEM (Technical or engineered material use); USES (Uses)
(hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

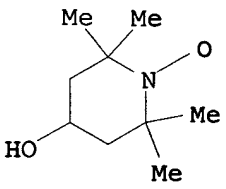
Cl—OH

● Na

IT **2226-96-2**
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(stabilizer; hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C11D007-32
ICS C11D003-395; C11D003-28

CC 46-6 (Surface Active Agents and Detergents)

ST thickened stabilized bleach hypochlorite; **disinfecting detergent** hypochlorite thickener polyacrylic acid crosslinked; hypochlorite stabilizer tetramethylhydroxypiperidine N oxide; hindered amine hypochlorite stabilizer; tetramethyl

hydroxypiperidine hypochlorite stabilizer

IT **Detergents**
(bleaching; hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

IT **Disinfectants**
(**detergent**; hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

IT **Detergents**
(**disinfectant**; hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

IT **Detergents**
(liq.; hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

IT 87-90-1D, Trichlorocyanuric acid, optionally salt 2782-57-2D, Dichlorocyanuric acid, optionally salt **7681-52-9**, **Sodium hypochlorite** 7790-28-5, Sodium periodate 13598-36-2, Phosphonic acid 14380-61-1D, **Hypochlorite**, **alkali** or **alk.**-earth metal salt
RL: TEM (Technical or engineered material use); USES (Uses)
(hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

IT **2226-96-2** 2403-88-5
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(stabilizer; hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

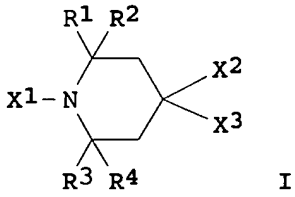
IT 79-10-7D, Acrylic acid, polymers 75760-37-1, Acusol 820 138789-85-2, Pemulen TR1 651353-92-3, Polygel DKP
RL: TEM (Technical or engineered material use); USES (Uses)
(thickener; hindered amine stabilized liq. **cleaning** compns. contg. active chlorine for fabrics and hard surfaces)

L45 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:100781 HCAPLUS
DOCUMENT NUMBER: 140:148120
TITLE: Hindered amine stabilized liquid compositions containing active chlorine
INVENTOR(S): Zanardi, Andrea; Accardi, Italo
PATENT ASSIGNEE(S): Italy
SOURCE: U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004023837	A1	20040205	US 2003-616775	20030710
PRIORITY APPLN. INFO.:			IT 2002-MI16943 A	20020730

The current Application

OTHER SOURCE(S): MARPAT 140:148120
GI



I

AB Liq. compns. with improved viscosity stability and/or active chlorine content, contains alkali or **alk.**-earth **hypochlorites**, and possibly other active chlorine releasers such as trichlorocyanuric acid, dichlorocyanuric acid and its alkali salts, with special ref. to those used for bleaching and **sanitizing** fabrics and surfaces. Method for stabilizing the viscosity and/or the active chlorine content of liq. compns. contg. alkali or **alk.**-earth **hypochlorites**, comprises the addn. to said compns. 0.001% to 5% by wt. of compds. belonging to the class of hindered amines having the general formula I, wherein R1, R2, R3 and R4, which may be the same or different, represent Me or ethyl; X1 represents H, Me, Et, an oxygen atom, an -OH group or an OR5 group, wherein R5 represents linear or branched alkyl C1-C4 or cyclohexyl; X2 represents hydrogen and X3 represents the groups -OH or -NHR5, wherein R5 has the meaning described above; or X2 and X3, taken together, represent an oxygen atom.

IT **7681-52-9**, **Sodium hypochlorite**
RL: TEM (Technical or engineered material use); USES (Uses)
(hindered amine stabilized liq. compns. contg. active chlorine)

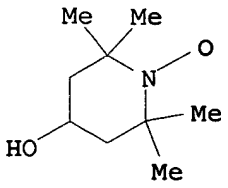
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IT **2226-96-2**
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(stabilizer; hindered amine stabilized liq. compns. contg. active chlorine)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C01B011-00
ICS A62D009-00; C01B007-00; C09K003-00; A62D003-00; C11D001-00
INCL 510499000; 252186360; 252186370
CC 46-6 (Surface Active Agents and Detergents)
ST thickened stabilized bleach hypochlorite; **disinfectant detergent** hypochlorite thickener polyacrylic acid crosslinked; hypochlorite stabilizer tetramethylhydroxypiperidine N oxide; hindered amine hypochlorite stabilizer; Tetramethyl hydroxypiperidine hypochlorite stabilizer
IT **Detergents**
(bleaching; hindered amine stabilized liq. compns. contg. active chlorine)
IT **Disinfectants**
(**detergent**; hindered amine stabilized liq. compns. contg. active chlorine)
IT **Detergents**
(**disinfectant**; hindered amine stabilized liq. compns. contg. active chlorine)
IT **Detergents**
(liq.; hindered amine stabilized liq. compns. contg. active chlorine)
IT 87-90-1D, Trichlorocyanuric acid, optionally salt 2782-57-2D, Dichlorocyanuric acid, optionally salt **7681-52-9**, **Sodium hypochlorite** 7790-28-5, Sodium periodate 13598-36-2, Phosphonic acid 14380-61-1D, **Hypochlorite**, **alkali** or **alk.**-earth metal salt
RL: TEM (Technical or engineered material use); USES (Uses)
(hindered amine stabilized liq. compns. contg. active chlorine)
IT **2226-96-2** 2403-88-5
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(stabilizer; hindered amine stabilized liq. compns. contg. active chlorine)

L45 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:568648 HCAPLUS
DOCUMENT NUMBER: 139:119061
TITLE: Process for **cleaning** food processing filters using cyclic nitroxyl compounds and oxidizing agent
INVENTOR(S): Jetten, Jan Matthijs; Van Der Lugt, Jan Pieter; Van Doren, Hendrik Arend; Van Wandelen, Mario Tarcisius Raymundus
PATENT ASSIGNEE(S): Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek TNO, Neth.
SOURCE: Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1329498	A1	20030723	EP 2002-75219	20020118
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CA 2474023	AA	20030724	CA 2003-2474023	20030120
WO 2003060052	A1	20030724	WO 2003-NL39	20030120
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003202831	A1	20030730	AU 2003-202831	20030120
EP 1465972	A1	20041013	EP 2003-701939	20030120
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005514517	T2	20050519	JP 2003-560139	20030120
US 2005178408	A1	20050818	US 2003-501584	20030120

PRIORITY APPLN. INFO.:	EP 2002-75219	A	20020118
	WO 2003-NL39	W	20030120

AB Filters used in the food and beverage industry can be **cleaned** by contacting the filters with a cyclic nitroxyl

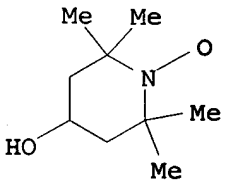
compd. and a reoxidizing agent or with a nitroxonium compd. in a free process. The nitroxyl halogen can be 2,2,6,6-tetramethylpiperidine-N-oxyl (TEMPO) or its 4-acetamido or 4-acetoxy deriv., and the nitroxonium compd. can be the corresponding oxidized ion obtained by enzymic or metal catalyzed oxidn. The reoxidizing agent may be a peracid, such as peracetic acid, persulfuric acid or permanganic acid, or a metal complex with a hydroperoxide. Thus, a beer fabric filter was **cleaned** using an aq. soln. (pH 10) contg. 1000 ppm of hypochlorite and 35 ppm of TEMPO.

IT **7681-52-9, Sodium Hypochlorite**
RL: TEM (Technical or engineered material use); USES (Uses)
(oxidizing agents; process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: TEM (Technical or engineered material use); USES (Uses)
(process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C11D011-00
ICS C11D003-28; C11D007-32; C11D003-39; C11D007-26
CC 46-6 (Surface Active Agents and Detergents)
Section cross-reference(s): 17
ST **cleaning** food processing filter TEMPO
IT Filters
(fabric; process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
IT Peroxy acids
RL: TEM (Technical or engineered material use); USES (Uses)
(oxidizing agents; process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
IT Enzymes, uses
RL: TEM (Technical or engineered material use); USES (Uses)

(oxidizing; process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
IT Membrane filters
Oxidizing agents
(process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
IT Coordination compounds
RL: TEM (Technical or engineered material use); USES (Uses)
(process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
IT 79-21-0, Peracetic acid **7681-52-9**, **Sodium Hypochlorite** 7722-84-1, Hydrogenperoxide, uses 7722-86-3, Peroxysulfuric acid 14380-61-1, Hypochlorite
RL: TEM (Technical or engineered material use); USES (Uses)
(oxidizing agents; process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
IT **2226-96-2**, 4-Hydroxy-TEMPO 2564-83-2, 2,2,6,6-Tetramethylpiperidine-N-oxyl 2564-83-2D, TEMPO, 4-acylamino derivs. 7647-15-6, Sodium bromide, uses 24959-67-9, Bromide, uses 104780-15-6
RL: TEM (Technical or engineered material use); USES (Uses)
(process for **cleaning** food processing filters using cyclic nitroxyl compds. and oxidizing agent)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:396479 HCAPLUS
DOCUMENT NUMBER: 135:5246
TITLE: Process for the selective oxidation of alcohols using easily separable nitroxyl radicals
INVENTOR(S): Sommerlade, Reinhard; Grutzmacher, Hansjorg; Boulmaaz, Souad
PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1103537	A1	20010530	EP 2000-811058	200011 10
EP 1103537	B1	20030514		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AT 240285	E	20030515	AT 2000-811058	200011 10
JP 2001199923	A2	20010724	JP 2000-346074	200011

				14
US 6441243	B1	20020827	US 2000-713277	200011 15
CA 2326304	AA	20010519	CA 2000-2326304	200011 17
SK 284566	B6	20050602	SK 2000-1758	200011 17
CN 1304921	A	20010725	CN 2000-132998	200011 20
US 2002161265	A1	20021031	US 2002-164768	200206 07
US 6660860	B2	20031209		
PRIORITY APPLN. INFO.:			CH 1999-2113 A	199911 19
			US 2000-713277 A3	200011 15

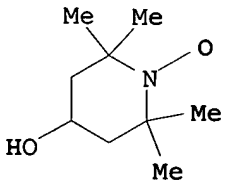
OTHER SOURCE(S): CASREACT 135:5246

AB The title process comprises oxidn. of alcs. to aldehydes and ketones by an alkali metal hypohalite and an insol. catalyst comprising O-derivatized 4-hydroxy-TEMPO (I). Thus, I was bound to Merrifield resin and the product used in the oxidn. of benzoin to benzil in 93% yield.

IT **2226-96-2DP**, 4-Hydroxy-TEMPO, resin bound
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(process for the selective oxidn. of alcs. using easily separable nitroxyl radicals)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)

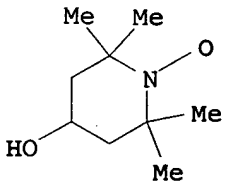


IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for the selective oxidn. of alcs. using easily separable nitroxyl radicals)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX

NAME)



IT **7778-66-7, Potassium hypochlorite**
13840-33-0, Lithium hypochlorite
RL: RGT (Reagent); RACT (Reactant or reagent)
(process for the selective oxidn. of alcs. using easily separable nitroxyl radicals)
RN 7778-66-7 HCAPLUS
CN Hypochlorous acid, potassium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● K

RN 13840-33-0 HCAPLUS
CN Hypochlorous acid, lithium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Li

IC ICM C07C045-30
ICS C07F009-6581; C07F009-59; C08G079-00
CC 21-2 (General Organic Chemistry)
IT **2226-96-2DP**, 4-Hydroxy-TEMPO, resin bound 63384-97-4P 118315-68-7P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(process for the selective oxidn. of alcs. using easily separable nitroxyl radicals)
IT 57-55-6, 1,2-Propanediol, reactions 67-63-0, 2-Propanol, reactions 78-93-3, 2-Butanone, reactions 93-56-1, 1-Phenyl-1,2-ethanediol 108-77-0, Cyanuric chloride 111-29-5, 1,5-Pentanediol 119-53-9, Benzoin 625-69-4, 2,4-Pentanediol 940-71-6 **2226-96-2**, 4-Hydroxy-TEMPO 26085-02-9, Poly(dichlorophosphazene)
RL: RCT (Reactant); RACT (Reactant or reagent)
(process for the selective oxidn. of alcs. using easily separable nitroxyl radicals)

IT 7681-52-9, Sodium hypochlorite **7778-66-7**, **Potassium hypochlorite** 13824-95-8 13824-96-9, Sodium hypobromite 13824-97-0, Potassium hypobromite **13840-33-0**, **Lithium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(process for the selective oxidn. of alcs. using easily separable nitroxyl radicals)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

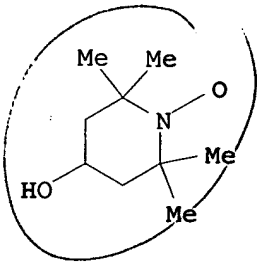
L45 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:208808 HCAPLUS
DOCUMENT NUMBER: 128:321381
TITLE: Preparation of amidocarboxylic acids, alkoxycarboxylic acids, and their salts as anionic **surfactants** for **detergents**
INVENTOR(S): Yokoi, Kenji; Nakagawa, Yuichi
PATENT ASSIGNEE(S): Lion Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10087554	A2	19980407	JP 1996-263668	199609 12

PRIORITY APPLN. INFO.: JP 1996-263668 199609 12

AB Amido- and/or alkoxy- or alkenyloxy-contg. carboxylic acids or their salts, useful as anionic **surfactants** for **detergents** (no data), are prepd. by oxidn. of amido- and/or alkoxy- or alkenyloxy-contg. alcs. with Cl-contg. oxidizing agents in the presence of nitroxide radicals and alkali metal halides or alk. earth metal halides. Me laurate was condensed with H2NCH2CH2OH in the presence of NaOMe under 160 mmHg at 80-110° for 7 h and oligomerized with ethylene oxide in the presence of NaOMe at 70-120° for 7 h to give C11H23CONH(CH2)2O(C2H4O)3.9H, which was treated with **NaClO** in the presence of 2,2,6,6-tetramethylpiperidine-1-oxyl and KBr aq. soln. and H2SO4 at 15-35° and pH ≤9 for 4 h to give C11H23CONH(CH2)2O(C2H4O)2.9CH2CO2H with 98% purity.
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl **7681-52-9**, **Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of carboxylic acids by oxidn. of alcs. with Cl-contg. oxidizing agents, nitroxide radicals, and metal halides)
RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07C059-125
ICS C07C051-29; C07C233-18; C07C233-20; C07C235-06
CC 23-16 (Aliphatic Compounds)
Section cross-reference(s): 46
ST alc oxidn nitroxide radical metal halide; chlorine oxidizing agent oxidn alkenyloxy alc; alkenyloxy carboxylic acid prepn anionic **surfactant**
IT **Surfactants**
(anionic; prepn. of carboxylic acids as anionic **surfactants** for **detergents**)
IT 142-78-9, Lauric acid monoethanolamide **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl 2564-83-2, 2,2,6,6-Tetramethylpiperidine-1-oxyl 7447-40-7, Potassium chloride, reactions 7647-15-6, Sodium bromide, reactions **7681-52-9**, **Sodium hypochlorite** 7758-02-3, Potassium bromide, reactions 9002-92-0, Poly(oxyethylene) lauryl ether
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of carboxylic acids by oxidn. of alcs. with Cl-contg. oxidizing agents, nitroxide radicals, and metal halides)

L45 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:480467 HCAPLUS
DOCUMENT NUMBER: 127:95027
TITLE: Preparation of amide ether carboxylic acids as **surfactants** by oxidation of polyoxyethylene aminoethyl ethers using nitroxides
INVENTOR(S): Imoto, Hiroyuki; Fujio, Akira; Oshima, Yukiko
PATENT ASSIGNEE(S): Kao Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09151169	A2	19970610	JP 1995-313922	19951201

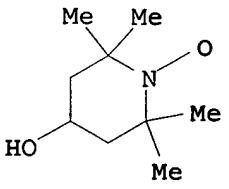
PRIORITY APPLN. INFO.: JP 1995-313922 19951201

OTHER SOURCE(S): CASREACT 127:95027; MARPAT 127:95027

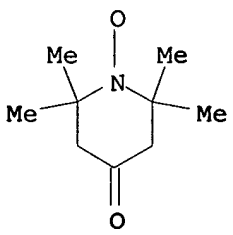
AB RCONHCH2CH2O(CH2CH2O)n-1CH2CO2M (I; R = C7-21 linear or branched alkyl, alkenyl; n = 0-20; M = H, cation), useful as **detergents** for shampoos, skin care products, and dishwashing compds., are prepd. by oxidn. of RCONHCH2CH2O(CH2CH2O)nH (II) with oxidizing agents in the presence of stable free radical nitroxides, optionally followed by neutralization. The reaction is preferably performed in the presence of Cl compds., Br compds., Cu(I) salts, or Fe(II) salts. NOx-generating compds. may be addnl. used in the oxidn. reaction. An aq. **NaClO** soln. was added dropwise to a mixt. of II (R = undecyl, n = 3) (prepn. given), 2,2,6,6-tetramethylpiperidine-1-oxyl, and CH2Cl2 and the reaction mixt. was further stirred at 20° for 6 h to give I (R = undecyl, n = 3, M = H) at conversion 98% and selectivity 95%.

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl
2896-70-0, 4-Oxo-2,2,6,6-tetramethylpiperidine-1-oxyl
7681-52-9, **Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07C233-18
ICS C07C231-12; C07C233-20; C07B061-00; C11D001-06
CC 23-18 (Aliphatic Compounds)
Section cross-reference(s): 46, 62
ST amide ether carboxylate prepn **surfactant**; polyoxyethylene amidoethyl ether oxidn nitroxide; piperidineoxyl polyoxyethylene amidoethyl ether oxidn
IT Quaternary ammonium compounds, uses
RL: CAT (Catalyst use); USES (Uses)
(bromides, catalysts; prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT Alkali metal bromides
Alkali metal chlorides
RL: CAT (Catalyst use); USES (Uses)
(catalysts; prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT Quaternary ammonium compounds, uses
RL: CAT (Catalyst use); USES (Uses)
(chlorides, catalysts; prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT Polyoxyalkylenes, preparation
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(coco amidoethyl ethers; prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT Fatty acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(coco, Me esters; in prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)

IT Fatty acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(coco, esters, Me esters; in prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT Oxidizing agents
Surfactants
(prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT 7632-00-0, Sodium nitrite 7697-37-2, Nitric acid, reactions 14293-70-0, Potassium nitrosodisulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(NOx-generating agent; prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT 3251-23-8, Copper(II) nitrate 5137-55-3, Tricaprylmethylammonium chloride 7647-14-5, Sodium chloride, uses 7647-15-6, Sodium bromide, uses 7787-70-4, Copper(I) bromide
RL: CAT (Catalyst use); USES (Uses)
(catalyst; prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT 111-82-0, Methyl laurate 141-43-5, Monoethanolamine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT 7758-89-6, Copper(I) chloride 7758-94-3, Iron(II) chloride 35675-80-0, Tricaprylmethylammonium bromide
RL: CAT (Catalyst use); USES (Uses)
(prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT 25322-68-3DP, coco amidoethyl ethers 26635-75-6P
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT 90453-60-4DP, coco amidoethyl ether 90453-60-4P 100424-86-0P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl 2564-83-2, 2,2,6,6-Tetramethylpiperidine-1-oxyl **2896-70-0**, 4-Oxo-2,2,6,6-tetramethylpiperidine-1-oxyl **7681-52-9**, **Sodium hypochlorite** 7782-50-5, Chlorine, reactions 11104-93-1, Nitrogen oxide, reactions 64486-65-3, 2,2,6,6-Tetramethylpiperidine-1-oxyl-4-sulfate
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of amide ether carboxylic acids as **surfactants** by oxidn. of polyoxyethylene aminoethyl ethers using nitroxides)

L45 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:185134 HCAPLUS
DOCUMENT NUMBER: 126:252694
TITLE: Preparation of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents

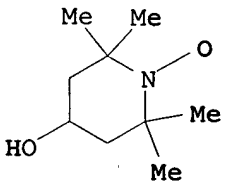
INVENTOR(S): Fried, Herbert E.; Singleton, David M.
PATENT ASSIGNEE(S): Shell Oil Co., USA
SOURCE: U.S., 6 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5608107	A	19970304	US 1995-455369	199505 31

PRIORITY APPLN. INFO.: US 1995-455369 199505 31

AB A process for prepg. an alkoxyalkanoic acid involves reacting the corresponding alkoxyalkanol with a resin-supported stable free radical nitroxide in the presence of a chlorine-contg. oxidant and a solvent at 0-35° and thereafter sepg. out the alkoxyalkanoic acid. Neodol 23-3T (ethoxylated C12-13 alcs., 31.5 g) and 3 g reaction product of 4-Hydroxy-2,2,6,6-tetramethylpiperidin-1-oxy and chloromethylated styrene-divinylbenzene copolymer in 100 mL CH2Cl2 were added with 6 g Na bicarbonate and 282 g 5.25% aq. Na hypochlorite and kept at 20° overnight to give a corresponding carboxylic acid with 98% conversion.

IT **2226-96-2D**, 4-Hydroxy-2,2,6,6-tetramethylpiperidin-1-oxy, reaction product with chloromethylated styrene-divinylbenzene copolymer
RL: CAT (Catalyst use); USES (Uses)
(prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

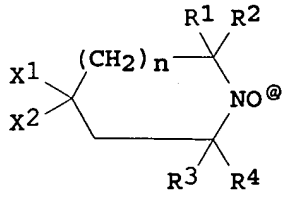
IC ICM C07C051-235
INCL 562538000
CC 46-3 (Surface Active Agents and Detergents)
Section cross-reference(s): 23, 38
ST alkoxyalkanoic acid anionic **surfactant emulsifier** ; ethoxylated alc oxidn alkoxycarboxylic acid
IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(C12-13, ethoxylated, oxidn. of; prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT Carboxylic acids, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(alkoxy-; prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT **Surfactants**
(anionic; prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT Oxidizing agents
(chloro; prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT Emulsifying agents
(prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT Oxidation catalysts
(resin-supported free radical nitroxide; prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT Nitroxides
RL: CAT (Catalyst use); USES (Uses)
(resin-supported; prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT **2226-96-2D**, 4-Hydroxy-2,2,6,6-tetramethylpiperidin-1-oxy, reaction product with chloromethylated styrene-divinylbenzene copolymer 9003-70-7D, Divinylbenzene-styrene copolymer, chloromethylated, reaction product with nitroxide
RL: CAT (Catalyst use); USES (Uses)
(prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT 25322-68-3DP, C12-13 alkyl ether, carboxylic acid
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)
IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of alkoxyalkanoic acids for anionic **surfactants** and emulsifying agents)

L45 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:281651 HCAPLUS
DOCUMENT NUMBER: 124:317006
TITLE: Preparation of 2-cyclopropyl-4-(4-fluorophenyl)quinoline-3-carbaldehyde by oxidation of 2-cyclopropyl-4-(4-fluorophenyl)-3-hydroxymethylquinoline with hypochlorite
INVENTOR(S): Nishizawa, Susumu; Matsumoto, Hiroo; Obara, Yoshio
PATENT ASSIGNEE(S): Sumika Fuainkemu KK, Japan; Sumitomo Chemical Co., Ltd.; Nissan Chemical Industries, Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

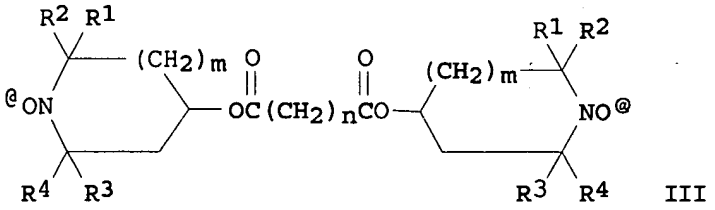
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08027114	A2	19960130	JP 1994-187729	19940718
JP 3641808	B2	20050427		

PRIORITY APPLN. INFO.: JP 1994-187729 19940718

OTHER SOURCE(S): CASREACT 124:317006; MARPAT 124:317006
GI



II



III

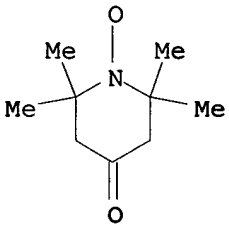
AB The alc. 2-cyclopropyl-4-(4-fluorophenyl)-3-hydroxymethylquinoline (I) is oxidized with NaOCl in the presence of nitroxyl radical

deriv. (II or III; X1, X2 = H, halo, OH, C1-5 alkyl, C5-6 cycloalkyl, C1-5 alkoxy, C1-10 acyloxy, CONH2, carbamoyl-C1-4 alkyl, CO2H, C1-5 alkoxycarbonyl; or X1X2 = O; R1 - R4 = C1-5 alkyl; m = 0,1; n = 0, 1-12) to give 2-cyclopropyl-4-(4-fluorophenyl)quinoline-3-carbaldehyde (IV), which is useful as intermediate for cholesterol lowering HMG-CoA enzyme inhibitor. Thus, 19.7 g I was dissolved in 200 mL CH2Cl2, treated with a soln. of 0.8 g KBr in 100 mL H2O, cooled to 1° with stirring, and treated with 104 mg 2,2,6,6-tetramethylpiperidine-1-oxyl and then dropwise with 120 mL 0.7 mol NaOCl, and the resulting mixt. was stirred at 0-5° for 5 h and adjusted to pH 8.6 by adding dropwise satd. NaHCO3 to give, after workup and crystn. from iso-Pr ether, 96% IV of 99.3% purity.

IT **2896-70-0**, 4-Oxo-2,2,6,6-tetramethylpiperidine-1-oxyl
RL: CAT (Catalyst use); USES (Uses)
(prepn. of cyclopropyl(fluorophenyl)quinolinecarbaldehyde by oxidn. of cyclopropyl(fluorophenyl)hydroxymethylquinoline with hypochlorite)

RN 2896-70-0 HCAPLUS

CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **7778-54-3**, **Calcium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of cyclopropyl(fluorophenyl)quinolinecarbaldehyde by oxidn. of cyclopropyl(fluorophenyl)hydroxymethylquinoline with hypochlorite)

RN 7778-54-3 HCAPLUS

CN Hypochlorous acid, calcium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

●1/2 Ca

IC ICM C07D215-14

CC 27-17 (Heterocyclic Compounds (One Hetero Atom))

IT 2516-88-3 2516-92-9 2564-83-2, 2,2,6,6-Tetramethylpiperidine-1-oxyl **2896-70-0**, 4-Oxo-2,2,6,6-tetramethylpiperidine-1-oxyl 3225-26-1 6599-87-7, 4-Acetoxy-2,2,6,6-tetramethylpiperidine-1-oxyl 7647-15-6, Sodium bromide, uses 7758-02-3, Potassium bromide, uses 14691-89-5, 4-Acetamido-2,2,6,6-tetramethylpiperidine-1-oxyl 95407-69-5, 4-Methoxy-2,2,6,6-

tetramethylpiperidine-1-oxyl 176234-43-8, 4-Hydroxyl-2,2,6,6-tetramethylpiperidine-1-oxyl
RL: CAT (Catalyst use); USES (Uses)
(prepn. of cyclopropyl(fluorophenyl)quinolinecarbaldehyde by oxidn. of cyclopropyl(fluorophenyl)hydroxymethylquinoline with hypochlorite)

IT 7681-52-9, Sodium hypochlorite **7778-54-3, Calcium hypochlorite** 121660-11-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of cyclopropyl(fluorophenyl)quinolinecarbaldehyde by oxidn. of cyclopropyl(fluorophenyl)hydroxymethylquinoline with hypochlorite)

L45 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:409389 HCAPLUS
DOCUMENT NUMBER: 119:9389
TITLE: Preparation of polyoxyalkylene or alkyl polyglucoside carboxylates
INVENTOR(S): Casciani, Robert V.; Likibi, Parfait J. M.; McGraw, Gregory L.
PATENT ASSIGNEE(S): Sandoz-Patent-G.m.b.H., Germany
SOURCE: Ger. Offen., 19 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4209869	A1	19921001	DE 1992-4209869	19920326
US 5334756	A	19940802	US 1991-675220	19910326
FR 2674528	A1	19921002	FR 1992-3626	19920324
FR 2674528	B1	19950106		
GB 2257149	A1	19930106	GB 1992-6359	19920324
GB 2257149	B2	19950524		
CH 683525	A	19940331	CH 1992-930	19920324
BE 1006771	A4	19941206	BE 1992-280	19920324
GB 2281074	A1	19950222	GB 1994-22659	19920324
GB 2281074	B2	19950524		
JP 05194334	A2	19930803	JP 1992-66932	

				19920325
NL 9200556	A	19921016	NL 1992-556	19920326
US 5504246	A	19960402	US 1994-268743	19940630
US 5670685	A	19970923	US 1995-471809	19950606
US 5668261	A	19970916	US 1996-612146	19960307

PRIORITY APPLN. INFO.:

US 1991-675220 A 19910326

GB 1992-6359 A3 19920324

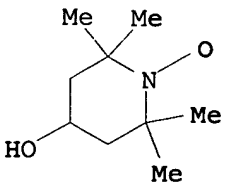
US 1994-268743 A1 19940630

AB In the title process, which is simple, selective, and com. attractive, 1 mol primary OH group-contg. polyoxyalkylene-siloxane, polyoxyalkylene amine or amide, polyoxyalkylene alkyl ether, or alkyl polyglucoside is treated with ≥1 mol halogen-contg. oxidant in the presence of a weak base and a nitroxyl catalyst. Adding 385 mL 1.91M NaOCl (pH 8.6) over 3 h to a mixt. of 91.35 g HO(CH2CH2O)27(CH2)3[Si(Me)2O]5Si(Me)2(CH2)3(OCH2CH2)27OH, 12.5 g NaHCO3, and 1.14 g 2,2,6,6-tetramethyl-1-piperidinoxyl and stirring for 1 h gave a block polyoxyalkylene-siloxane bearing 2 terminal CO2Na groups.

IT **2226-96-2D**, 4-Hydroxy-2,2,6,6-tetramethyl-1-piperidinoxyl, reaction products with poly[(chloromethyl)styrene]
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for oxidn. of polyalkylene glycols and polyglucosides)

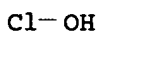
RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7778-54-3, Calcium hypochlorite**

RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. by, of polyalkylene glycols and polyglucosides)
RN 7778-54-3 HCAPLUS
CN Hypochlorous acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



●1/2 Ca

IC ICM C08G085-00
ICS C08G077-38; C08G077-46; C08G065-32; C08G065-22; C08B037-00; C07H015-04
ICA C08F002-30; C08F002-26; B01F017-42; B01F017-52; B01F017-54; D06M015-53; C11D003-37; C11D003-20; C11D003-22
CC 35-8 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 27, 44, 67
IT **2226-96-2D**, 4-Hydroxy-2,2,6,6-tetramethyl-1-piperidinoxyl, reaction products with poly[(chloromethyl)styrene] 2564-83-2, 2,2,6,6-Tetramethyl-1-piperidinoxyl 9080-67-5D, Poly[(chloromethyl)styrene], reaction products with hydroxytetramethylpiperidinoxyl
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for oxidn. of polyalkylene glycols and polyglucosides)
IT 7681-52-9, Sodium hypochlorite **7778-54-3**, **Calcium hypochlorite** 7782-50-5, Chlorine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. by, of polyalkylene glycols and polyglucosides)

L45 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:553252 HCAPLUS
DOCUMENT NUMBER: 117:153252
TITLE: Preparation of alkoxyalkanoic acids by oxidation of alkoxyalkanols
INVENTOR(S): Fried, Herbert Elliott
PATENT ASSIGNEE(S): Shell Internationale Research Maatschappij B. V., Neth.
SOURCE: Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 488467	A2	19920603	EP 1991-203068	199111 22
EP 488467	A3	19921028		
EP 488467	B1	19960131		

R: BE, CH, DE, ES, FR, GB, IT, LI, NL

US 5175360	A	19921229	US 1990-618205	199011 26
KR 218651	B1	19990901	KR 1991-20819	199111 21
CA 2055804	AA	19920527	CA 1991-2055804	199111 22
CA 2055804	C	20020604		
AU 9188061	A1	19920528	AU 1991-88061	199111 22
AU 643339	B2	19931111		
CN 1061773	A	19920610	CN 1991-110929	199111 22
CN 1033226	B	19961106		
BR 9105080	A	19920623	BR 1991-5080	199111 22
JP 04283537	A2	19921008	JP 1991-332937	199111 22
JP 3101037	B2	20001023		
ES 2083516	T3	19960416	ES 1991-203068	199111 22
PRIORITY APPLN. INFO.:			US 1990-618205 A	199011 26

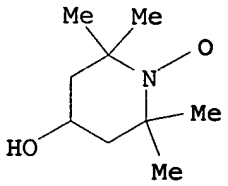
OTHER SOURCE(S): MARPAT 117:153252

AB Acids RO(CH2CHR1O)nCH2CO2H (R = C1-22 alkyl; R1 = H, Me; n = 1-12), useful in **detergent** compns., are prepd. by oxidizing the corresponding alkoxyalkanols in the presence of solubilized stable free radical nitroxide such as 2,2,6,6-tetramethyl-1-piperidinyloxy (I). A mixt. of 31 g Neodol 23-3T (ethoxylated C12-13 alcs.), 0.5 g I, and 125 mL Cl2CH2 was treated with 282 g 5.25% **NaOCl** soln. (contg. 2.6 g 25% H2SO4 to give pH 8.6) to give >99% conversion of OH end groups with 90% selectivity to CO2H groups.

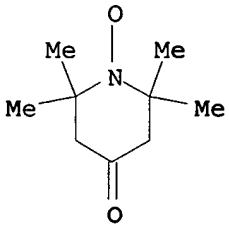
IT **2226-96-2 2896-70-0**
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for oxidn. of ethoxylated alcs. to carboxylic acids)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IC ICM C07C059-125
ICS C11D001-06; C07C051-29
CC 46-3 (Surface Active Agents and Detergents)
Section cross-reference(s): 23
IT **Surfactants**
(alkoxyalkanoic acids, prepn. of, from ethoxylated alcs., catalysts for)
IT **2226-96-2** 2564-83-2 **2896-70-0** 64486-65-3
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for oxidn. of ethoxylated alcs. to carboxylic acids)

L45 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:107086 HCAPLUS
DOCUMENT NUMBER: 116:107086
TITLE: Poly(vinyl alcohol)-derived reactive polymers and their manufacture
INVENTOR(S): Endo, Takeshi
PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03263407	A2	19911122	JP 1990-63378	199003 13
JP 2865780	B2	19990308		

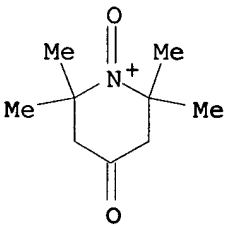
PRIORITY APPLN. INFO.: JP 1990-63378
199003
13

AB Title polymers contain 45-85 mol% CH2CO (I), 1-54.99 mol% CH2CHOH (II), and 0.01-54 mol% CH2CH(O2CR1) (III; R1 = H, C1-10 alkyl), show intrinsic viscosity ≥0.25 dL/g in Me2SO at 30°, and are manufd. by oxidizing poly(vinyl alc.) of ≥20 mol% sapon. degree with an α,α'-tetraalkyloxoaminium salt in the presence of a perchlorate or carbonate salt. Thus, a mixt. of poly(vinyl alc.) with av. d.p. 1750 and sapon. degree 88.5 mol% 10, N-methyl-2-pyrrolidone 490, **Mg(ClO4)2** 68, and 4-methoxy-2,2,6,8-tetramethyl-1-oxopiperidinium chloride 49 parts was stirred at room temp. under N in the dark to give a polymer contg. I 61, II 27.5, and III (R1 = Me) 11.5 mol%.

IT **139425-71-1**
RL: USES (Uses)
(oxidn. with, of poly(vinyl alc.))

RN 139425-71-1 HCAPLUS

CN Piperidinium, 2,2,6,6-tetramethyl-1,4-dioxo-, chloride (9CI) (CA INDEX NAME)



● Cl-

IC ICM C08F008-06
ICS C08F016-06

CC 35-8 (Chemistry of Synthetic High Polymers)

IT 90246-27-8 95407-70-8 **139425-71-1**
RL: USES (Uses)
(oxidn. with, of poly(vinyl alc.))

L45 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:211040 HCAPLUS
DOCUMENT NUMBER: 104:211040
TITLE: Corrosion inhibitors for chemical deicers
INVENTOR(S): Romanov, Andrej; Ambrovic, Peter; Manasek, Zdenek; Pastusakova, Vlasta
PATENT ASSIGNEE(S): Czech.
SOURCE: Czech., 5 pp.
CODEN: CZXXA9
DOCUMENT TYPE: Patent
LANGUAGE: Czech

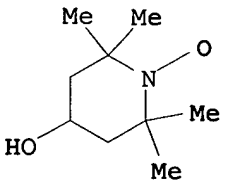
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 221199	B	19830429	CS 1981-3536	19810514
PRIORITY APPLN. INFO.:			CS 1981-3536	19810514

AB The corrosion by org. or inorg. deicing agents on roads and bridges in the winter season is decreased by adding: (a) NR1R2R3 (where R1 = H, OH, C1-10 alkyl or hydroxyalkyl; R2, R3 = H, alkyl, hydroxyalkyl, arylhydroxyalkyl, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, or R2 + R3 = C1-14 pyridyl or piperazinyl 0.005-1.5%; and (b) oxidizing agents (esp. hypochlorites, chlorates, and perchlorates of alkali metals and/or alk. earth metals and/or alkali metal peroxides, H2O2, alkali metal peroxysulfates, or NH4 peroxysulfate) 0.1-15%. Thus, **degreased** cylinders of malleable cast iron (surface area 50 cm2) were immersed 24 h in a 250-mL aq. 12% urea soln. contg. 0.5 NaClO3 and 0.2% diethanolamine. No corrosion occurred, but it did (75 g/m2 wt. loss) in the absence of the inhibitor.

IT **2226-96-2 7778-54-3**
RL: USES (Uses)
(corrosion inhibitors contg., for road deicer mixts.)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 7778-54-3 HCAPLUS
CN Hypochlorous acid, calcium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

●1/2 Ca

IC C23F011-00
CC 55-10 (Ferrous Metals and Alloys)
Section cross-reference(s): 58

IT 100-37-8 102-71-6, uses and miscellaneous 108-01-0 110-85-0, uses and miscellaneous 110-89-4, uses and miscellaneous 111-40-0 111-42-2, uses and miscellaneous 124-09-4, uses and miscellaneous 141-43-5, uses and miscellaneous **2226-96-2** 2403-88-5 5470-11-1 7758-19-2 **7778-54-3** 36768-62-4
RL: USES (Uses)
(corrosion inhibitors contg., for road deicer mixts.)

=> d l46 ibib abs hitstr hitind 1-40

L46 ANSWER 1 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:58386 HCAPLUS
DOCUMENT NUMBER: 144:156676
TITLE: Polyethylene glycol carboxylic acid and its preparation and its application to conjugate with drugs
INVENTOR(S): Ma, Guanghui; Su, Zhiguo; Li, Xingqi
PATENT ASSIGNEE(S): Institute of Process Engineering, Chinese Academy of Sciences, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 10 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

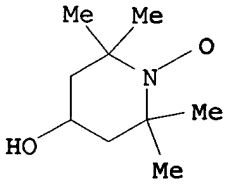
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1618837	A	20050525	CN 2003-10113367	200311 17

PRIORITY APPLN. INFO.: CN 2003-10113367 200311 17

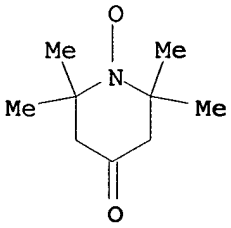
AB The method comprises oxidating polyethylene glycol in water soln. in the presence of nitroxide free radical with adding 2.5-4 times hypohalate of -OH as oxidant and 5-30% bromide of -OH at -5-50°C and 7-14 pH. The thus prepd. polyethylene glycol carboxylic acids have the general formula of RO(CH2CH2O)nCH2COOH, wherein R is -CH2COOH, -CH3, -C2H5, -C3H7, etc., n=5-1000. Nitroxide free radical is from 2,2,6,6-tetramethyl-piperidinyl-oxy, 4-methoxy-2,2,6,6-trimethyl-piperidinyl-1-oxy, or their mixt. Hypohalate is IA or IIA metal salt of hypochlorite or hypobromite, e.g. **sodium hypochlorite**, sodium hypobromite. Bromide is IA or IIA metal salt such as sodium bromide, potassium bromide, calcium bromide. Title product may be used for finishing biol. macromol. and pharmaceutic micromol. with nucleophilic group, such as protein, polypeptide, anticancer drugs, antibiotic, anti-inflammatory drugs.

IT **2226-96-2 2896-70-0**
RL: CAT (Catalyst use); USES (Uses)
(pharmaceutical compns. contg. polyethylene glycol carboxylic

acids and their conjugates with drugs)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(pharmaceutical compns. contg. polyethylene glycol carboxylic acids and their conjugates with drugs)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C08G065-48
ICS C07K017-08
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 21, 35
IT **2226-96-2** 2564-83-2, 2,2,6,6-Tetramethyl-piperidinyl-oxy
2896-70-0 13408-29-2, Nitroxide radical 95407-69-5
RL: CAT (Catalyst use); USES (Uses)
(pharmaceutical compns. contg. polyethylene glycol carboxylic acids and their conjugates with drugs)
IT 538-75-0, DCC 6066-82-6, N-Hydroxysuccinimide 7647-15-6, Sodium bromide, reactions **7681-52-9, Sodium hypochlorite** 7758-02-3, Potassium bromide, reactions

7789-41-5, Calcium bromide 13824-96-9, Sodium hypobromite
RL: RGT (Reagent); RACT (Reactant or reagent)
(pharmaceutical compns. contg. polyethylene glycol carboxylic acids and their conjugates with drugs)

L46 ANSWER 2 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:29409 HCAPLUS
DOCUMENT NUMBER: 144:130797
TITLE: Bleaching composition comprising a cyclic hindered amine
INVENTOR(S): Resta, Stefano; Grande, Giovanni; Bianchetti, Giulia Ottavia
PATENT ASSIGNEE(S): The Procter & Gamble Company, USA
SOURCE: Eur. Pat. Appl., 17 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1614742	A1	20060111	EP 2005-75958	200504 22
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU				
WO 2006010089	A1	20060126	WO 2005-US24461	200507 08
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRIORITY APPLN. INFO.:		
EP 2004-447169	A	200407 08
EP 2005-75958	A	200504 22

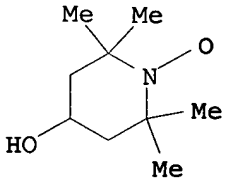
AB The present invention relates to a liq. bleaching compn. comprising a hypohalite bleach, a cyclic hindered amine and a compd. selected from the group consisting of bleach-unstable brighteners, bleach-unstable coloring-agents and mixts. thereof.

IT **7681-52-9, Sodium hypochlorite**
RL: TEM (Technical or engineered material use); USES (Uses)
(bleaching compn. comprising a cyclic hindered amine)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

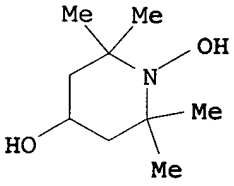
Cl—OH

● Na

IT **2226-96-2**, 1-Oxyl-2,2,6,6-tetramethyl-4-hydroxypiperidine
3637-10-3
RL: TEM (Technical or engineered material use); USES (Uses)
(stabilizer; bleaching compn. comprising a cyclic hindered amine)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 3637-10-3 HCAPLUS
CN 4-Piperidinol, 1-hydroxy-2,2,6,6-tetramethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



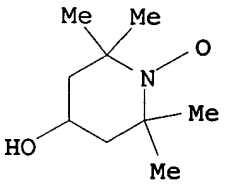
CC 46-5 (Surface Active Agents and Detergents)
IT **7681-52-9, Sodium hypochlorite**
RL: TEM (Technical or engineered material use); USES (Uses)
(bleaching compn. comprising a cyclic hindered amine)
IT **2226-96-2**, 1-Oxyl-2,2,6,6-tetramethyl-4-hydroxypiperidine
2403-88-5, 4-Hydroxy-2,2,6,6-tetramethylpiperidine 2564-83-2,
1-Oxyl-2,2,6,6-tetramethylpiperidine **3637-10-3**
873198-23-3, Tempoxy LO 873198-30-2, Tinogard SF-X
RL: TEM (Technical or engineered material use); USES (Uses)
(stabilizer; bleaching compn. comprising a cyclic hindered amine)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 3 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:729816 HCAPLUS
DOCUMENT NUMBER: 143:349015
TITLE: Technical Production of Aldehydes by Continuous Bleach Oxidation of Alcohols Catalyzed by 4-Hydroxy-TEMPO
AUTHOR(S): Fritz-Langhals, Elke
CORPORATE SOURCE: Consortium fuer Elektrochemische Industrie GmbH, Wacker-Chemie GmbH, Munich, D-81379, Germany
SOURCE: Organic Process Research & Development (2005), 9(5), 577-582
CODEN: OPRDFK; ISSN: 1083-6160
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Aldehydes were easily prepd. from the corresponding alcs. in good to excellent yields by oxidn. with tech. bleach and catalytic amts. of 4-hydroxy-2,2,6,6-tetramethyl-piperidine-1-oxyl (4-hydroxy TEMPO, HOT). Whereas the well-known batch process performed on lab. scale is not suitable for the tech. synthesis esp. of activated β-substituted aldehydes, this transformation can be performed continuously in a simple tube reactor. This layout meets all requirements necessary for the process, i.e., turbulent mixing of the biphasic mixt., removal of heat, short contact times, and high output. Thus, a single tube of 3 mm diam. renders about 60 mol of aldehyde per day.

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethyl-piperidine-1-oxyl
RL: CAT (Catalyst use); USES (Uses)
(high yield tech. prodn. of aldehydes by continuous oxidn. of alcs. with bleach catalyzed by 4-hydroxy-TEMPO in tube reactor)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



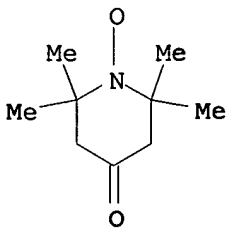
IT **7681-52-9, Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(oxidn. reagent, free chlorine source; high yield tech. prodn. of aldehydes by continuous oxidn. of alcs. with bleach catalyzed by 4-hydroxy-TEMPO in tube reactor)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 24
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethyl-piperidine-1-oxyl
RL: CAT (Catalyst use); USES (Uses)
(high yield tech. prodn. of aldehydes by continuous oxidn. of alcs. with bleach catalyzed by 4-hydroxy-TEMPO in tube reactor)
IT **7681-52-9**, **Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(oxidn. reagent, free chlorine source; high yield tech. prodn. of aldehydes by continuous oxidn. of alcs. with bleach catalyzed by 4-hydroxy-TEMPO in tube reactor)
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 4 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:543902 HCAPLUS
DOCUMENT NUMBER: 143:229434
TITLE: Enhancing selectivity in oxidation catalysis with sol-gel nanocomposites
AUTHOR(S): Gancitano, Pamela; Ciriminna, Rosaria; Testa, Maria Luisa; Fidalgo, Alexandra; Ilharco, Laura M.; Pagliaro, Mario
CORPORATE SOURCE: Istituto per lo Studio dei Materiali Nanostrutturati, CNR, Palermo, 90146, Italy
SOURCE: Organic & Biomolecular Chemistry (2005), 3(13), 2389-2392
CODEN: OBCRAK; ISSN: 1477-0520
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Valuable org. compds. such as α-hydroxy acids are easily synthesized with relevant selectivity enhancement using a sol-gel hydrophobized nanostructured silica matrix doped with the organocatalyst TEMPO. E.g., ORMOSIL-supported TEMPO mediated the oxidn. of vic-diol 4-ClC6H4CMe(OH)CH2OH by **NaOCl** to give 80% 4-ClC6H4CMe(OH)CO2H and 5% 4-ClC6H4COMe. 4-ClC6H4CMe(OH)CH2OH was prepd. by the RuCl3-catalyzed dihydroxylation of 4-ClC6H4CMe:CH2.
IT **2896-70-0DP**, reaction products with 3-aminopropyltrimethoxysilane, methyltrimethoxysilane, and tetra-Me orthosilicate
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of α-hydroxy carboxylic acids by oxidn. of diols mediated by ORMISOL-entrapped TEMPO)
RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



CC 23-16 (Aliphatic Compounds)
IT 681-84-5DP, Tetramethyl orthosilicate, reaction products with 3-aminopropyltrimethoxysilane, 4-oxo-TEMPO, and methyltrimethoxysilane 1185-55-3DP, Methyltrimethoxysilane, reaction products with 3-aminopropyltrimethoxysilane, 4-oxo-TEMPO, and tetra-Me orthosilicate **2896-70-0DP**, reaction products with 3-aminopropyltrimethoxysilane, methyltrimethoxysilane, and tetra-Me orthosilicate 13822-56-5DP, 3-Aminopropyltrimethoxysilane, reaction products with methyltrimethoxysilane, 4-oxo-TEMPO, and tetra-Me orthosilicate
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of α-hydroxy carboxylic acids by oxidn. of diols mediated by ORMISOL-entrapped TEMPO)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 5 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:472218 HCAPLUS
DOCUMENT NUMBER: 143:8163
TITLE: Production of organosilicon compounds bearing carbonyl groups
INVENTOR(S): Ochs, Christian; Fritz-Langhals, Elke
PATENT ASSIGNEE(S): Wacker-Chemie G.m.b.H., Germany
SOURCE: PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005049697	A2	20050602	WO 2004-EP13137	200411 18
WO 2005049697	A3	20060209		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,

SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL,
PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG

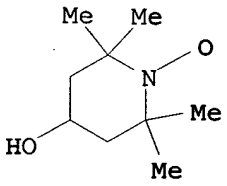
DE 10354259	A1	20050609	DE 2003-10354259 200311 20
PRIORITY APPLN. INFO.:			DE 2003-10354259 A 200311 20

AB In the title process, which is inexpensive and selective, organosilicon compds. bearing carbinol groups are oxidized in the presence of (cyclo)aliph., arom., or heterocyclic compds. bearing NO-, NOH-, or -NHOH groups as catalysts. Adding 177 g 1.8M **NaOCl** (pH 9.5) over 200 s to a mixt. of (3-hydroxypropyl)dimethylsilyl group-terminated polydimethylsiloxane (OH content 3.2%) 121, 4-hydroxy-2,2,6,6-tetramethylpiperidinyloxy 1.90, and NaBr 2.27 g, 50 mL satd. NaHCO3, and 400 mL CH2Cl2 stirred at -10° and stirring for 5 min gave a product with 96% Si-bonded -CH2CH2CHO groups and 4% unreacted -(CH2)3OH groups.

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidinyl-1-oxy
RL: CAT (Catalyst use); USES (Uses)
(catalysts for oxidn. of organosilicon compds. bearing hydroxyl groups to carbonyl groups)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalysts for oxidn. of organosilicon compds. bearing hydroxyl groups to carbonyl groups)

RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

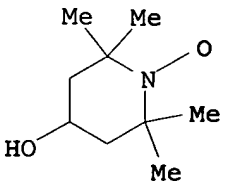
Cl—OH

● Na

IC ICM C08G077-04
CC 35-2 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 29
ST oxidn silyl alc group carbonyl catalyst; hydroxypropyl group polysiloxane oxidn catalyst; hydroxyTEMPO catalyst oxidn silyl alc; **sodium hypochlorite** oxidn silyl alc
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidinyl-1-oxy 2564-83-2, TEMPO 3225-26-1, 4-(Benzoyloxy)-2,2,6,6-tetramethylpiperidinyl-1-oxy 6146-44-7D, 1-Pyrrolidinyloxy, derivs. 6599-87-7, 4-Acetoxy-2,2,6,6-tetramethylpiperidinyl-1-oxy 14691-88-4, 4-Amino-2,2,6,6-tetramethylpiperidinyl-1-oxy 14691-89-5, 4-Acetamido-2,2,6,6-tetramethylpiperidinyl-1-oxy
RL: CAT (Catalyst use); USES (Uses)
(catalysts for oxidn. of organosilicon compds. bearing hydroxyl groups to carbonyl groups)
IT 128-09-6, N-Chlorosuccinimide 937-14-4, 3-Chloroperoxybenzoic acid 3240-34-4 **7681-52-9, Sodium hypochlorite** 7782-44-7, Oxygen, reactions 10058-23-8 13824-96-9, Sodium hypobromite 31900-57-9D, Poly(dimethylsilanediol), hydroxypropyl group-terminated 37222-66-5, Oxone
RL: RCT (Reactant); RACT (Reactant or reagent)
(catalysts for oxidn. of organosilicon compds. bearing hydroxyl groups to carbonyl groups)

L46 ANSWER 6 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:404362 HCAPLUS
DOCUMENT NUMBER: 143:285958
TITLE: Selective oxidation of alcohols to carbonyl compounds mediated by fluorous-tagged TEMPO radicals
AUTHOR(S): Holczknecht, Orsolya; Cavazzini, Marco; Quici, Silvio; Shepperson, Ian; Pozzi, Gianluca
CORPORATE SOURCE: CNR-Instituto di Scienze e Tecnologie Molecolari (ISTM), Milan, 20133, Italy
SOURCE: Advanced Synthesis & Catalysis (2005), 347(5), 677-688
CODEN: ASCAF7; ISSN: 1615-4150
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Oxidn. of primary, benzylic and secondary alcs. into their corresponding aldehydes and ketones with safe, inexpensive oxidants was achieved in good yields under mild conditions in the presence of catalytic amts. of 2,2,6,6-tetramethylpiperidine-1-oxyl (TEMPO) radicals bearing perfluoroalkyl substituents. These "fluorous-tagged" TEMPOs were readily isolated from the reaction products by liq.-liq. or solid-phase extn., considerably simplifying the purifn. step. Their recyclability was strongly influenced by the nature of the oxidizing system. The best results were obtained using either [bis(acetoxy)iodo]benzene (BAIB) or aq. **NaOCl** as the primary oxidants. Fluorous TEMPO 10 could be reused up to six times in the BAIB oxidn. of 1-octanol with only minor loss of catalytic activity.
IT **2226-96-2**
RL: RCT (Reactant); RACT (Reactant or reagent)

(oxidn. of alcs. to carbonyl compds. mediated by fluorous-tagged TEMPO radicals)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



CC 22-7 (Physical Organic Chemistry)
Section cross-reference(s): 67
IT 108-77-0 335-64-8 **2226-96-2** 14691-88-4 36768-62-4 89373-67-1 200112-75-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of alcs. to carbonyl compds. mediated by fluorous-tagged TEMPO radicals)
REFERENCE COUNT: 53 THERE ARE 53 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

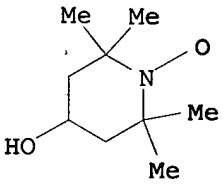
L46 ANSWER 7 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:903759 HCAPLUS
DOCUMENT NUMBER: 141:381254
TITLE: Crystalline polysaccharide derivatives, their production and their applications
INVENTOR(S): Vignon, Michel; Montanari, Suzelei; Habibi, Youssef
PATENT ASSIGNEE(S): Centre National de la Recherche Scientifique CNRS, Fr.
SOURCE: Fr. Demande, 68 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2854161	A1	20041029	FR 2003-5195	20030428
PRIORITY APPLN. INFO.:			FR 2003-5195	20030428

AB The invention relates to cryst. polysaccharide derivs. in which at least part of the CH2OH groups are oxidized to CO2H groups, whereby the latter are able to be partly or entirely in the form of salts or

functionalized. These derivs. are characterized in that they are present in the form of aggregates comprising microcrystals and/or individualized microfibrils, with the lateral sizes of the microcrystals and microfibrils being on the order of 1-30 nm and their length up to .apprx.100 μm, whereby the the microcrystals and microfibrils form aggregates in water. The products may be used as viscosifiers, stabilizers, superabsorbents, or chelators. In an example, cotton linters were oxidized with **NaOCl** in the presence of TEMPO and NaBr. Other examples deal with starch and chitin.

IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(in prodn. of microcryst. and microfibrillar oxidized polysaccharide derivs.)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9**, **Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prodn. of microcryst. and microfibrillar oxidized polysaccharide derivs.)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

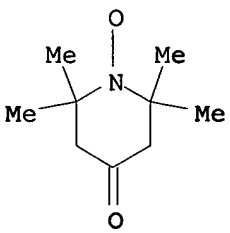
Cl—OH

● Na

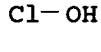
IC ICM C08B015-00
CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 44
IT **2226-96-2**, 4-Hydroxy-TEMPO 2564-83-2, TEMPO 6599-87-7, 4-Acetoxy-TEMPO 7647-15-6, Sodium bromide, uses 9001-62-1, Lipase 9002-10-2, Polyphenol oxidase 9003-99-0, Peroxidase 14691-88-4, 4-Amino-TEMPO 14691-89-5, 4-Acetamido-TEMPO 15178-63-9, 4-Maleimido-TEMPO 22690-04-6, 4-(Phosphonooxy)-TEMPO 31645-22-4, 4-(Benzyloxy)-TEMPO 80498-15-3, Laccase
RL: CAT (Catalyst use); USES (Uses)
(in prodn. of microcryst. and microfibrillar oxidized polysaccharide derivs.)
IT **7681-52-9**, **Sodium hypochlorite**

10028-15-6, Ozone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prodn. of microcryst. and microfibrillar oxidized polysaccharide derivs.)
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 8 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:527046 HCAPLUS
DOCUMENT NUMBER: 141:410474
TITLE: Oxidation of amino diols mediated by homogeneous and heterogeneous TEMPO
AUTHOR(S): Testa, Maria Luisa; Ciriminna, Rosaria; Hajji, Chakib; Garcia, Elena Zaballos; Ciclosi, Marco; Arques, Jose Sepulveda; Pagliaro, Mario
CORPORATE SOURCE: Istituto per lo Studio dei Materiali Nanostrutturati, CNR, Palermo, 90146, Italy
SOURCE: Advanced Synthesis & Catalysis (2004), 346(6), 655-660
CODEN: ASCAF7; ISSN: 1615-4150
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 141:410474
AB The conversion of amino diols to amino hydroxy acids by oxidn. of the primary hydroxy group mediated by homogeneous and heterogeneous TEMPO (2,2,6,6-tetramethylpiperidin-1-oxyl radical) is reported. The synthesis uses **NaOCl** as primary oxidant and TEMPO, either dissolved in the homogeneous phase or entrapped in a sol-gel matrix, as catalytic mediator. Homogeneous TEMPO is suitable for the oxidn. of aliph. methylamino diols, while the hybrid org.-inorg. silica sol-gel catalysts are more selective mediators for the oxidn. of benzylic amino diols like the potent antibiotic chloramphenicol which, under homogeneous conditions, are unselectively oxidized to benzoic acids.
IT **2896-70-0DP**, 4-Oxo-TEMPO, reaction products with 3-aminopropyltrimethoxysilane in presence of NaBH3CN, sol-gel polycondensation products with alkoxysilanes
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(oxidn. of amino diols mediated by homogeneous and recyclable heterogeneous TEMPO)
RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



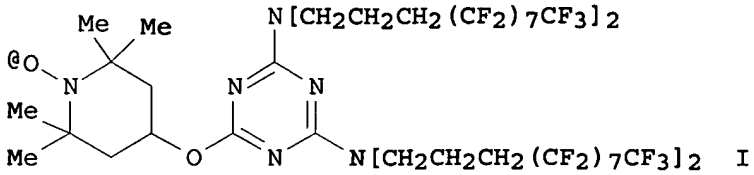
IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of amino diols mediated by homogeneous and recyclable heterogeneous TEMPO)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



CC 21-2 (General Organic Chemistry)
Section cross-reference(s): 67
IT 681-84-5DP, Tetramethyl silicate, sol-gel polycondensation products with 4-oxo-TEMPO/3-aminopropyltrimethoxysilane reductive amination product with/without alkyltrimethoxysilanes 1067-25-0DP, Trimethoxy(propyl)silane, sol-gel polycondensation products with 4-oxo-TEMPO/3-aminopropyltrimethoxysilane reductive amination product and tetra-Me silicate 1185-55-3DP, Trimethoxy(methyl)silane, sol-gel polycondensation products with 4-oxo-TEMPO/3-aminopropyltrimethoxysilane reductive amination product and tetra-Me silicate **2896-70-0DP**, 4-Oxo-TEMPO, reaction products with 3-aminopropyltrimethoxysilane in presence of NaBH3CN, sol-gel polycondensation products with alkoxysilanes 13822-56-5DP, 3-Aminopropyltrimethoxysilane, reaction products with 4-oxo-TEMPO in presence of NaBH3CN, sol-gel polycondensation products with alkoxysilanes
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(oxidn. of amino diols mediated by homogeneous and recyclable heterogeneous TEMPO)
IT 56-75-7, Chloramphenicol **7681-52-9, Sodium hypochlorite** 24424-99-5, Di-tert-butyl dicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of amino diols mediated by homogeneous and recyclable heterogeneous TEMPO)
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 9 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:385024 HCAPLUS
DOCUMENT NUMBER: 141:123444
TITLE: Synthesis and catalytic activity of a fluorous-tagged TEMPO radical
AUTHOR(S): Pozzi, Gianluca; Cavazzini, Marco; Holczknecht, Orsolya; Quici, Silvio; Shepperson, Ian
CORPORATE SOURCE: CNR-Istituto di Scienze e Tecnologie Molecolari (ISTM), Milan, 20133, Italy
SOURCE: Tetrahedron Letters (2004), 45(22), 4249-4251
CODEN: TELEAY; ISSN: 0040-4039

PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 141:123444
GI



I

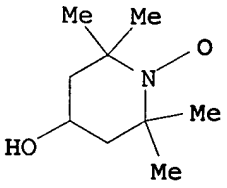
AB A fluorous-tagged TEMPO radical has been prepd. and its catalytic activity in the chemoselective oxidn. of alcs. to carbonyl compds. has been investigated. The target compd. thus prepd. was 4-[[4,6-bis[(4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,11-heptadecafluoroundecyl)amino]-1,3,5-triazin-2-yl]oxy]-2,2,6,6-tetramethyl-1-piperidinyloxy (I). The new fluorous radical proved to be an efficient, selective and easily recoverable catalyst, which can be conveniently used in std. org. solvents and then isolated and recycled by fluorous liq.-liq. extn. The fluorous biphasic oxidn. of 1-octanol using I as catalyst and bis(acetato-κO)phenyliodine as oxidant gave octanal with high selectivity. When the reaction was carried out in pure dichloromethane, I was recovered by fluorous extn. using perfluoro-1,3-dimethylcyclohexane.

IT **7681-52-9**, **Sodium hypochlorite** (**NaOCl**)
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidant; prepn. of [[bis[(heptadecafluoroundecyl)amino]triazinyl]oxy]-1-piperidinyloxy radical, study of its catalytic activity, and application toward chemoselective oxidn. of alcs. to aldehydes or ketones)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethyl-1-piperidinyloxy
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of [[bis[(heptadecafluoroundecyl)amino]triazinyl]oxy]-1-piperidinyloxy radical, study of its catalytic activity, and application toward chemoselective oxidn. of alcs. to aldehydes or ketones)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



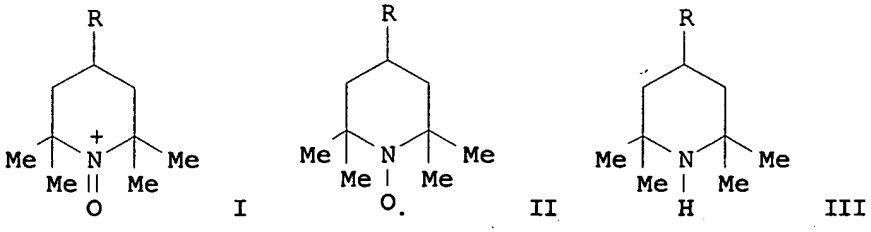
CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 23, 24

IT 87-90-1, 1,3,5-Trichloro-1,3,5-triazine-2,4,6(1H,3H,5H)-trione
3240-34-4, Bis(acetato-κO)phenyliodine **7681-52-9**,
Sodium hypochlorite (NaOCl)
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidant; prepn. of [[bis[(heptadecafluoroundecyl)amino]triazinyl]oxy]-1-piperidinyloxy radical, study of its catalytic activity, and application toward chemoselective oxidn. of alcs. to aldehydes or ketones)

IT 98-85-1, α-Methylbenzenemethanol 100-51-6, Benzenemethanol, reactions 104-54-1, 3-Phenyl-2-propen-1-ol 108-77-0, 2,4,6-Trichloro-1,3,5-triazine 111-87-5, 1-Octanol, reactions 112-42-5, 1-Undecanol 123-96-6, 2-Octanol 696-71-9, Cyclooctanol 873-75-6, 4-Bromobenzenemethanol 1653-30-1, 2-Undecanol **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethyl-1-piperidinyloxy 200112-75-0, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-Heptadecafluoro-11-iodoundecane
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of [[bis[(heptadecafluoroundecyl)amino]triazinyl]oxy]-1-piperidinyloxy radical, study of its catalytic activity, and application toward chemoselective oxidn. of alcs. to aldehydes or ketones)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 10 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:177507 HCAPLUS
DOCUMENT NUMBER: 141:260458
TITLE: Preparation of tetramethylpiperidine-1-oxoammonium salts and their use as oxidants in organic chemistry. A review
AUTHOR(S): Merbouh, Nabyl; Bobbitt, James M.; Brueckner, Christian
CORPORATE SOURCE: Department of Chemistry, University of Connecticut, Storrs, CT, 06269-3060, USA
SOURCE: Organic Preparations and Procedures International (2004), 36(1), 3-31
CODEN: OPPIAK; ISSN: 0030-4948
PUBLISHER: Organic Preparations and Procedures, Inc.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
GI



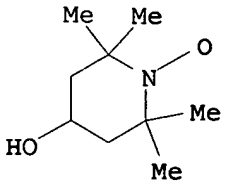
I II III

AB A review. The discovery of 2,2,6,6-tetramethylpiperidine-based oxoammonium salts (I; R = oxo, H, OH, NH2, NHAc, OMe, OBz) in 1965 by Golubev et al has led to the synthesis of a no. of oxoammonium-based oxidizing agents with diverse properties. However, many of the oxoammonium salts or their precursors are either not com. available or are expensive. Reports of their prepn. are spread over 40 yr of literature. This review is a compilation of the most often cited and most practical procedures for their syntheses and includes exptl. details. A large body of work detailing the use of oxoammonium salts as catalytic and stoichiometric oxidants in preparative org. chem. also accumulated over the past four decades. The review of their use, however, will focus on the literature from 1990 to date, excluding the patent literature, as a no. of excellent earlier reviews on select aspects of this chem. are available. The goal of this review is to allow org. chemists to prep. and study oxoammonium salts, irresp. of their list prices or com. availability. Oxoammonium salts I are derived from nitroxide free radicals (II) by a one-electron oxidn. Nitroxides are generally prepd. by oxidn. of the corresponding amine 2,2,6,6-tetramethylpiperidine derivs. (III). The α-Me groups are crucial for the stabilization of the oxoammonium salts. A no. of 4-substituted tetramethylpiperidine derivs. were used for the synthesis of oxoammonium salts, combined with several counter ions. Oxoammonium salts are potent but selective oxidants. They can either be prepd. in situ from a nitroxide by reaction with a secondary oxidant, thus making the nitroxide a catalyst, or they can be used as stoichiometric oxidants. They are versatile oxidants in org. chem. and the mild, transition metal-free reaction conditions and the selectivity of the oxidns. recommend these oxidants for wider use. Further, the option for tandem reactions will greatly increase the utility of these reagents.

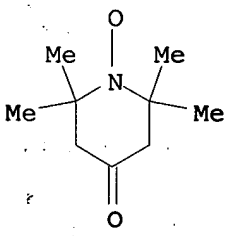
IT **2226-96-2P**, 4-Hydroxy-2,2,6,6-tetramethyl-1-piperidinyloxy
2896-70-0P, 4-Oxo-2,2,6,6-tetramethyl-1-piperidinyloxy
RL: CAT (Catalyst use); RCT (Reactant); RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of tetramethylpiperidine-1-oxoammonium salts and their use as oxidants in org. chem.)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



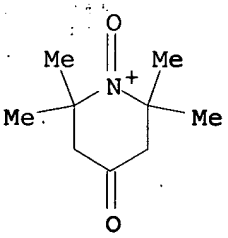
RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **33247-84-6P 139425-71-1P**
RL: CAT (Catalyst use); RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of tetramethylpiperidine-1-oxoammonium salts and their use as oxidants in org. chem.)
RN 33247-84-6 HCAPLUS
CN Piperidinium, 2,2,6,6-tetramethyl-1,4-dioxo-, tetrafluoroborate(1-) (8CI, 9CI) (CA INDEX NAME)

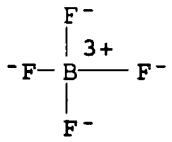
CM 1

CRN 45985-26-0
CMF C9 H16 N O2

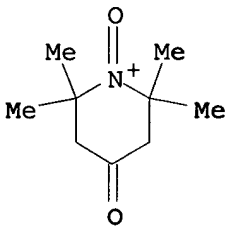


CM 2

CRN 14874-70-5
CMF B F4
CCI CCS



RN 139425-71-1 HCAPLUS
CN Piperidinium, 2,2,6,6-tetramethyl-1,4-dioxo-, chloride (9CI) (CA INDEX NAME)



● Cl⁻

IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of tetramethylpiperidine-1-oxoammonium salts and their use as oxidants in org. chem.)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

CC 27-0 (Heterocyclic Compounds (One Hetero Atom))
IT **2226-96-2P**, 4-Hydroxy-2,2,6,6-tetramethyl-1-piperidinyloxy
2564-83-2P, 2,2,6,6-Tetramethyl-1-piperidinyloxy **2896-70-0P**, 4-Oxo-2,2,6,6-tetramethyl-1-piperidinyloxy 3225-26-1P, 4-Benzoyloxy-2,2,6,6-tetramethyl-1-piperidinyloxy 14691-88-4P, 4-Amino-2,2,6,6-tetramethyl-1-piperidinyloxy 14691-89-5P, 4-Acetamido-2,2,6,6-tetramethyl-1-piperidinyloxy 95407-69-5P, 4-Methoxy-2,2,6,6-tetramethyl-1-piperidinyloxy
RL: CAT (Catalyst use); RCT (Reactant); RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of tetramethylpiperidine-1-oxoammonium salts and their use as oxidants in org. chem.)

IT 26864-01-7P 26864-02-8P 27403-27-6P 27403-30-1P 33247-78-8P
33247-81-3P **33247-84-6P** 85917-27-7P 90246-27-8P
95407-70-8P **139425-71-1P** 219543-09-6P
RL: CAT (Catalyst use); RGT (Reagent); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(prepn. of tetramethylpiperidine-1-oxoammonium salts and their use as oxidants in org. chem.)

IT 67-64-1, Acetone, reactions 98-88-4, Benzoyl chloride 108-94-1, Cyclohexanone, reactions 110-63-4, 1,4-Butanediol, reactions 121-33-5, 2-Methoxy-4-formylphenol 556-72-9, Acetonine 2047-91-8 7664-41-7, Ammonia, reactions **7681-52-9, Sodium hypochlorite** 36768-62-4, 4-Amino-2,2,6,6-tetramethylpiperidine
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of tetramethylpiperidine-1-oxoammonium salts and their use as oxidants in org. chem.)

REFERENCE COUNT: 117 THERE ARE 117 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 11 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:159015 HCAPLUS
DOCUMENT NUMBER: 140:199022
TITLE: Procedure for the production of alkynecarboxylic acids by the oxidation of alkynyl alcohols with hypohalites in the presence of a nitroxyl compound
INVENTOR(S): Stohrer, Juergen; Fritz-Langhals, Elke; Bruenninghaus, Christian
PATENT ASSIGNEE(S): Consortium fuer Elektrochemische Industrie G.m.b.H., Germany
SOURCE: Ger., 11 pp.
CODEN: GWXXAW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10244633	B3	20040226	DE 2002-10244633	20020925
EP 1403240	A1	20040331	EP 2003-20442	20030911
EP 1403240	B1	20040721		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 271533	E	20040815	AT 2003-20442	20030911
ES 2222450	T3	20050201	ES 2003-3020442	20030911

					11
US 2004059154	A1	20040325	US 2003-667810		200309 22
JP 2004115519	A2	20040415	JP 2003-331417		200309 24
PRIORITY APPLN. INFO.:			DE 2002-10244633	A	200209 25

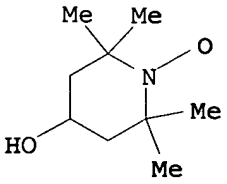
OTHER SOURCE(S): CASREACT 140:199022

AB Alkynecarboxylic acids (e.g., propargylic acid) are prepd. in high yield and selectivity by the oxidn. of an alkynyl alc. (e.g., propargylic alc.) with a hypohalite (e.g., **sodium hypochlorite**) in the presence of a nitroxyl compd. (e.g., 4-hydroxy-TEMPO) at a pH value >7 by continuous addn. of the alkynyl alc. and the hypohalogenite to the reaction mixt.

IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(in a procedure for the prodn. of alkynecarboxylic acids by the oxidn. of alkynyl alcs. with hypohalites in the presence of a nitroxyl compd.)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidant; procedure for the prodn. of alkynecarboxylic acids by the oxidn. of alkynyl alcs. with hypohalites in the presence of a nitroxyl compd.)

RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07C051-29
ICS C07C057-18; C07C057-20; C07C057-22

CC 23-16 (Aliphatic Compounds)

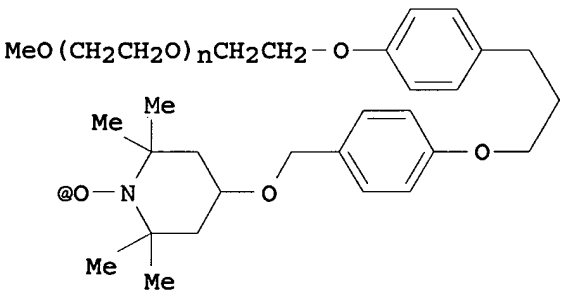
Section cross-reference(s): 45

IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(in a procedure for the prodn. of alkynecarboxylic acids by the oxidn. of alkynyl alcs. with hypohalites in the presence of a nitroxyl compd.)

IT **7681-52-9**, **Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidant; procedure for the prodn. of alkynecarboxylic acids by the oxidn. of alkynyl alcs. with hypohalites in the presence of a nitroxyl compd.)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 12 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:42420 HCAPLUS
DOCUMENT NUMBER: 140:217078
TITLE: Poly(ethylene glycol)-Supported TEMPO: An Efficient, Recoverable Metal-Free Catalyst for the Selective Oxidation of Alcohols
AUTHOR(S): Pozzi, Gianluca; Cavazzini, Marco; Quici, Silvio; Benaglia, Maurizio; Dell'Anna, Gianmaria
CORPORATE SOURCE: CNR-Istituto di Scienze e Tecnologie Molecolari, Milan, I-20133, Italy
SOURCE: Organic Letters (2004), 6(3), 441-443
CODEN: ORLEF7; ISSN: 1523-7060
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 140:217078
GI



I

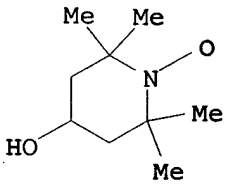
AB Poly(ethylene glycol)-supported TEMPO (PEG-TEMPO) has been prepd., and its catalytic activity in the chemoselective oxidn. of alcs. with stoichiometric amts. of org. or inorg. oxidants has been investigated. The new metal-free catalyst exhibits high activity and is easily removed from the reaction mixt. by filtration. Recycling expts. showed that PEG-TEMPO can be reused up to six times with no loss of catalytic activity. The linker-bound catalyst thus prepd. was polyethylene glycol-bound [[4-[3-(4-hydroxyphenyl)propoxy]phenyl]methoxy]-2,2,6,6-tetramethyl-1-

piperidinyloxy (I). The influence of solvent on the oxidn. of 1-octanol using bis(acetato-κO)phenyliodine was unexpected: dichloromethane gave good results, whereas the use of acetic acid did not enhance the oxidn. rate.

IT **2226-96-2**, 4-Hydroxy2,2,6,6-tetramethyl-1-piperidinyloxy
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of poly(ethylene glycol)-supported TEMPO as efficient, recoverable metal-free catalyst for selective oxidn. of alcs.)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite (NaClO)**
RL: RGT (Reagent); RACT (Reactant or reagent)
(prepn. of poly(ethylene glycol)-supported TEMPO as efficient, recoverable metal-free catalyst for selective oxidn. of alcs.)

RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

CC 21-2 (General Organic Chemistry)

IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(secondary; prepn. of carbonyl compds. by oxidn. of alcs. using **sodium hypochlorite** as oxidant and poly(ethylene glycol)-supported TEMPO as catalyst under bromide-free conditions)

IT 98-85-1, α-Methylbenzenemethanol 100-51-6, Benzenemethanol, reactions 104-54-1, Cinnamyl alcohol 108-93-0, Cyclohexanol, reactions 112-42-5, 1-Undecanol 123-96-6, 2-Octanol 696-71-9, Cyclooctanol 873-75-6, 4-Bromobenzenemethanol 1653-30-1, 2-Undecanol
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of carbonyl compds. by oxidn. of alcs. using **sodium hypochlorite** as oxidant and poly(ethylene glycol)-supported TEMPO as catalyst under bromide-free conditions)

IT 98-86-2P, 1-Phenylethanone, preparation 100-52-7P, Benzaldehyde,

preparation 104-55-2P, Cinnamaldehyde 108-94-1P, Cyclohexanone, preparation 111-13-7P, 2-Octanone 112-12-9P, 2-Undecanone 112-44-7P, Undecanal 502-49-8P, Cyclooctanone 1122-91-4P, 4-Bromobenzaldehyde
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of carbonyl compds. by oxidn. of alcs. using **sodium hypochlorite** as oxidant and poly(ethylene glycol)-supported TEMPO as catalyst under bromide-free conditions)

IT 111-87-5, 1-Octanol, reactions **2226-96-2**, 4-Hydroxy2,2,6,6-tetramethyl-1-piperidinyloxy 143116-30-7, 1-(Bromomethyl)-4-(2-propenyloxy)benzene
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of poly(ethylene glycol)-supported TEMPO as efficient, recoverable metal-free catalyst for selective oxidn. of alcs.)

IT 87-90-1, Trichloroisocyanuric acid 3240-34-4, Bis(acetato-κO)phenyliodine **7681-52-9**, **Sodium hypochlorite (NaClO)**
RL: RGT (Reagent); RACT (Reactant or reagent)
(prepn. of poly(ethylene glycol)-supported TEMPO as efficient, recoverable metal-free catalyst for selective oxidn. of alcs.)

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 13 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:864575 HCAPLUS
DOCUMENT NUMBER: 141:158730
TITLE: Nitroxide-mediated oxidation of cellulose using TEMPO derivatives: HPSEC and NMR analyses of the oxidized products
AUTHOR(S): Shibata, Izumi; Isogai, Akira
CORPORATE SOURCE: Graduate School of Agricultural and Life Sciences, The University of Tokyo, Bunkyo-ku, Tokyo, 113-8657, Japan
SOURCE: Cellulose (Dordrecht, Netherlands) (2003), 10(4), 335-341
CODEN: CELLE8; ISSN: 0969-0239
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Regenerated cellulose (viscose rayon) was oxidized using NaBr, **NaClO** and 2,2,6,6-tetramethylpiperidine-1-oxyl radical (TEMPO) or one of ten related nitroxyl radicals in water at pH 10-11. The C6 primary hydroxyl groups in rayon were oxidized to carboxyl groups in most cases, thus giving water-sol. products. However, the oxidn. times required for complete dissoln. of the products varied substantially, depending on the nitroxyl radical used. Wt. av. ds. p. (DPw) of the oxidized products were detd. by means of high performance size exclusion chromatog. (HPSEC) using pullulan stds. All the products had bimodal HPSEC distribution patterns, probably reflected by the solid-state structure of viscose rayon. When 4-acetamido-TEMPO and 4-carboxy-TEMPO were used, cellouronic acids having almost homogeneous chem. structures with higher DPw than for TEMPO were obtained quant. within 30 min. The oxidns. using 4-amino-TEMPO, 4-carboxy-PROXYL and 4-carbamoyl-PROXYL

gave cellouronic acids having the highest DPw, although reaction times of more than 4 h were required, and some side reactions occurred on the products.

IT **7681-52-9, Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(high performance SEC and NMR analyses of oxidized products of nitroxide-mediated oxidn. of cellulose using)

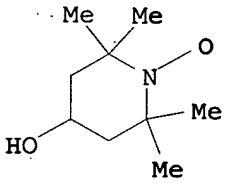
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

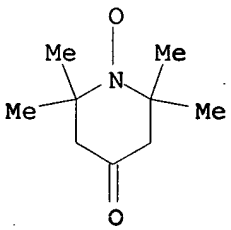
● Na

IT **2226-96-2**, 4-Hydroxy-TEMPO **2896-70-0**, 4-Oxo-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(high performance SEC and NMR analyses of oxidized products of nitroxide-mediated oxidn. of cellulose using TEMPO derivs.)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



CC 43-3 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 27

IT 7647-15-6, Sodium bromide (NaBr), reactions **7681-52-9**, **Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(high performance SEC and NMR analyses of oxidized products of

nitroxide-mediated oxidn. of cellulose using)
IT 2154-68-9 **2226-96-2**, 4-Hydroxy-TEMPO 2564-83-2 **2896-70-0**, 4-Oxo-TEMPO 3229-73-0, 3-Carbamoyl-2,2,5,5-tetramethyl-3-pyrrolin-1-yloxyl 4399-80-8, 3-Carbamoyl-PRoxyl 14691-88-4, 4-Amino-TEMPO 14691-89-5, 4-Acetamido-TEMPO 22690-04-6, 4-Phosphonooxy-TEMPO 24567-97-3, 4-(2-Bromoacetamido)-TEMPO 37149-18-1, 4-Carboxy-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(high performance SEC and NMR analyses of oxidized products of nitroxide-mediated oxidn. of cellulose using TEMPO derivs.)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 14 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:777759 HCAPLUS
DOCUMENT NUMBER: 139:276804
TITLE: Process for producing heterocyclic aldehyde
INVENTOR(S): Shiomi, Yasuhiro; Uno, Osamu; Ohta, Akio; Sunakami, Takeshi
PATENT ASSIGNEE(S): Koei Chemical Co., Ltd., Japan
SOURCE: PCT Int. Appl., 48 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003080575	A1	20031002	WO 2003-JP3568	200303 25
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003221048	A1	20031008	AU 2003-221048	200303 25
GB 2404190	A1	20050126	GB 2004-21452	200303 25
US 2005124807	A1	20050609	US 2003-509228	200303 25

PRIORITY APPLN. INFO.: JP 2002-86974 A

200203
26

WO 2003-JP3568 W
200303
25

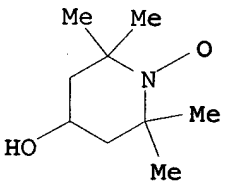
OTHER SOURCE(S): MARPAT 139:276804

AB The patent relates to a process in which a heterocyclic alc. is oxidized to produce a heterocyclic aldehyde with high selectivity in high yield. The process comprises reacting a heterocyclic compd. having per mol. at least one hydroxymethyl group bonded to a carbon atom of the heterocycle with a hypohalogenous acid salt in the presence of a base to oxidize the hydroxymethyl group to thereby produce the corresponding heterocyclic aldehyde, wherein the reaction is conducted in the presence of a 2,2,6,6-tetramethylpiperidin-1-oxyl deriv. having per mol. two or more 2,2,6,6-tetramethylpiperidin-1-oxyl-4-yl groups. Thus, 3-pyridine-methanol was oxidized by **sodium hypochlorite** in presence of an oligomer deriv. obtained from Chimassorb 944LD with hydrogen peroxide and generated 3-pyridinecarbaldehyde (90.1%) and nicotinic acid (3.4%).

IT **2226-96-2DP**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-N-oxy, reaction product with poly(2-isocyanatoethyl methacrylate)
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(in prepn. of heterocyclic aldehyde)

RN 2226-96-2 HCAPLUS

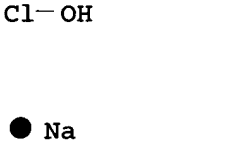
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(in prepn. of heterocyclic aldehyde)

RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



IC ICM C07D213-48

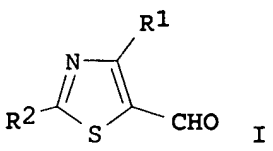
ICS C07D333-16; C07D213-30
CC 27-1 (Heterocyclic Compounds (One Hetero Atom))
ST heterocyclic aldehyde prepn **sodium hypochlorite** piperidinyl oligomer
IT **2226-96-2DP**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-N-oxy, reaction product with poly(2-isocyanatoethyl methacrylate) 71878-19-8DP, Chimassorb 944LD, oligomer prepd. in presence of hydrogen peroxide 88007-27-6DP, 2-Isocyanatoethyl methacrylate homopolymer, reaction product with 4-hydroxy-2,2,6,6-tetramethylpiperidine-1-oxy 360785-62-2DP, Chimassorb 2020FDL, oligomer prepd. in presence of hydrogen peroxide
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(in prepn. of heterocyclic aldehyde)
IT **7681-52-9**, **Sodium hypochlorite**
7722-84-1, Hydrogen peroxide, reactions
RL: RGT (Reagent); RACT (Reactant or reagent)
(in prepn. of heterocyclic aldehyde)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 15 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:734761 HCAPLUS
DOCUMENT NUMBER: 139:246023
TITLE: Manufacturing method of 4-alkyl-5-formylthiazole derivatives having high yields
INVENTOR(S): Tanaka, Hideo; Kuroboshi, Manabu; Kameyama, Yutaka
PATENT ASSIGNEE(S): Otsuka Chemical Holdings Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

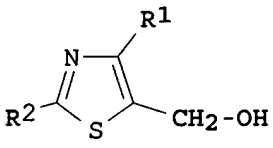
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003261547	A2	20030919	JP 2002-61848	20020307

PRIORITY APPLN. INFO.: JP 2002-61848 20020307

OTHER SOURCE(S): CASREACT 139:246023; MARPAT 139:246023
GI



I



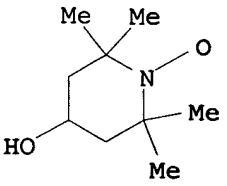
II

AB The patent relates to the prepn. of 4-alkyl-5-formylthiazole derivs. of formula I from precursor of formula II wherein R1 is C1-C4 alkyl, and R2 is H or substituted amino group. The prepn. is conducted in presence of N-oxyl catalyst by two-phase reaction in org. solvents such as carboxylic acid esters, Me Et ketone, Me iso-Pr ketone, and Me iso-Bu ketone. Thus, 5-formyl-4-methylthioazole prepd. from hydroxymethylthiazole precursor with catalyst 4-benzoyloxy-2,2,6,6-tetramethylpiperidine-N-oxyl in Me Et ketone in presence of sodium bromide, sodium bicarbonate, and **sodium hypochlorite** showed 94% yield compared to 41% for a similar prepn. conducted in methylene chloride.

IT **2226-96-2**
RL: CAT (Catalyst use); USES (Uses)
(in prepn. of 4-alkyl-5-formylthiazole deriv.)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C07D277-24
ICS C07B061-00

CC 28-7 (Heterocyclic Compounds (More Than One Hetero Atom))

IT 2154-33-8 **2226-96-2** 2516-92-9 2564-83-2 3225-26-1, 4-Benzoyloxy-2,2,6,6-tetramethylpiperidine N-oxyl 38078-71-6 95407-69-5 132207-24-0 132207-25-1
RL: CAT (Catalyst use); USES (Uses)
(in prepn. of 4-alkyl-5-formylthiazole deriv.)

L46 ANSWER 16 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:652130 HCAPLUS
DOCUMENT NUMBER: 139:181969
TITLE: Process for the preparation of alkynoic acids and alkynoic acid esters of alkynols via the oxidation of alkynols
INVENTOR(S): Stohrer, Juergen; Fritz-Langhals, Elke; Brueninghaus, Christian; Stauch, Dagmar
PATENT ASSIGNEE(S): Consortium Fuer Elektrochemische Industrie

G.m.b.H., Germany
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

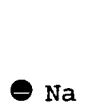
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1336599	A1	20030820	EP 2003-2103	20030130
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10206619	A1	20031009	DE 2002-10206619	20020215
DE 10206619	B4	20040325		
US 2003158439	A1	20030821	US 2003-365887	20030213
PRIORITY APPLN. INFO.:			DE 2002-10206619 A	20020215

OTHER SOURCE(S): CASREACT 139:181969

AB Alkynoic acids (e.g., propynoic acid) and alkynoic acid esters of alkynols (e.g., 2-propyn-1-yl propynoate) are prepd. in high yield and selectivity via the oxidn. of alkynols (e.g., propargyl alc.) in the presence of 1-10 mol-equiv. of a hypohalogenite (e.g., **sodium hypochlorite**) and in the presence of a nitroxy compds. (e.g., TEMPO) at a pH of <7.

IT **7681-52-9, Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(oxidant; process for the prepn. of alkynoic acids and alkynoic acid esters of alkynols via the oxidn. of alkynols)

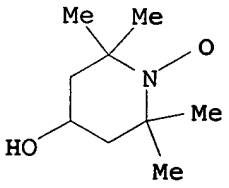
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)



IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(process for the prepn. of alkynoic acids and alkynoic acid esters of alkynols via the oxidn. of alkynols)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX

NAME)



IC ICM C07C051-29
ICS C07C057-20; C07C057-22; C07C057-24; C07C057-42; C07C067-40; C07C069-606
CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
Section cross-reference(s): 23, 48
IT **7681-52-9, Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(oxidant; process for the prepn. of alkynoic acids and alkynoic acid esters of alkynols via the oxidn. of alkynols)
IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: CAT (Catalyst use); USES (Uses)
(process for the prepn. of alkynoic acids and alkynoic acid esters of alkynols via the oxidn. of alkynols)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 17 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:297635 HCAPLUS
DOCUMENT NUMBER: 138:303933
TITLE: Preparation of aldehydes or ketones by catalytic oxidation of alcohols in the presence of nitroxyl compounds
INVENTOR(S): Fritz-Langhals, Elke; Petersen, Hermann; Stohrer, Juergen
PATENT ASSIGNEE(S): Consortium Fuer Elektrochemische Industrie Gmbh, Germany
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

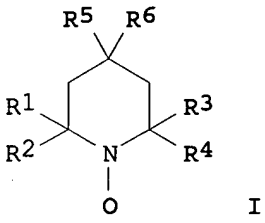
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1302456	A1	20030416	EP 2002-22244	20021002
EP 1302456	B1	20040102		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
DE 10156138	A1	20030430	DE 2001-10156138	

				20011115
AT 257136	E	20040115	AT 2002-22244	20021002
ES 2211848	T3	20040716	ES 2002-2022244	20021002
US 2003073871	A1	20030417	US 2002-264682	20021004
US 6750371	B2	20040615		

PRIORITY APPLN. INFO.:
DE 2001-10150164 A 20011011
DE 2001-10156138 A 20011115

OTHER SOURCE(S): CASREACT 138:303933; MARPAT 138:303933

GI



I

AB Aldehydes or ketones are prepd. by continuous reacting alcs. in an org. liq. phase with an oxidizing agent in aq. phase in the presence of nitroxyl compds. [I; R1-R4 = alkyl, alkenyl, aryl, aralkyl,; R5, R6 = H, OH, cyano, halo, (branched) (satd.) alkyl, (hetero)aryl, aralkyl, etc.]. The reaction is carried out by intensive intermixing the phases and the contacting time of the phases amts. 0.1 s-15 min. Thus, a soln. of (Me)3CCH2OH and 4-acetamido-TEMPO in CH2Cl2, a soln. of **NaOCl** and CO2, and a soln. of NaBr in H2O were pumped with different pumping rates by using a static mixing element in a cooled Ti spiral pipe to give 93% (Me)3CCHO.

IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidizing agent; for prepn. of aldehydes or ketones by catalytic oxidn. of alcs. in presence of nitroxyl compds.)

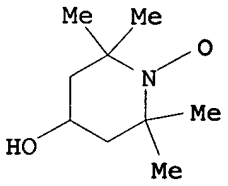
RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidyl-1-oxyl
RL: CAT (Catalyst use); USES (Uses)
(prepn. of aldehydes or ketones by catalytic oxidn. of alcs. in presence of nitroxyl compds.)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C07B041-06
ICS C07C045-30; C07C047-198; C07D209-48
CC 23-14 (Aliphatic Compounds)
ST aldehyde prepn continuous mixing tube reactor; ketone prepn turbulent mixing tube reactor; alc catalytic oxidn **sodium hypochlorite** sodium bromide TEMPO
IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidizing agent; for prepn. of aldehydes or ketones by catalytic oxidn. of alcs. in presence of nitroxyl compds.)
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidyl-1-oxyl
2564-83-2, TEMPO 14691-89-5, 4-Acetamino-2,2,6,6-tetramethylpiperidine-1-oxyl
RL: CAT (Catalyst use); USES (Uses)
(prepn. of aldehydes or ketones by catalytic oxidn. of alcs. in presence of nitroxyl compds.)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 18 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:150421 HCAPLUS
DOCUMENT NUMBER: 138:172129
TITLE: Making carboxylated cellulose fibers and paper products
INVENTOR(S): Jewell, Richard A.; Komen, Joseph Lincoln; Su, Bing; Weerawarna, S. Ananda; Li, Yong
PATENT ASSIGNEE(S): Weyerhaeuser Company, USA
SOURCE: U.S., 23 pp., Cont.-in-part of U.S. 6,379,494.
CODEN: USXXAM

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6524348	B1	20030225	US 2000-641276	200008 17
US 6379494	B1	20020430	US 1999-418909	199910 15

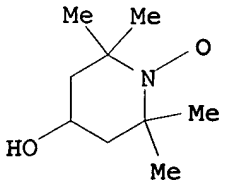
PRIORITY APPLN. INFO.: US 1999-272137 B2 199903 19
US 1999-418909 A2 199910 15

OTHER SOURCE(S): MARPAT 138:172129

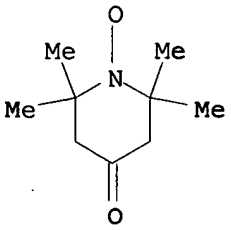
AB The title method of making carboxylated cellulose fibers whose fiber strength and d.p. is not significantly sacrificed comprises oxidn. and stabilized stages. The title method involves the use of cyclic nitroxide free radical compds. as a primary oxidant and a hypohalite salt as a secondary oxidant in an aq. environment. Preferably the oxidized cellulose is then stabilized against D.P. loss in alk. environments and color reversion with a reducing agent such as Na borohydride. Alternatively it may be treated with an tertiary oxidant such as Na chlorite. The method results in a high percentage of carboxyl groups located at the fiber surface. The product is esp. useful as a papermaking fiber where it contributes strength and has a higher attraction for cationic additives. The product is also useful as an additive to recycled fiber to increase strength. The method can be used to improve properties of either virgin or recycled fiber. It does not require high α-cellulose fiber but is suitable for regular market pulps.

IT **2226-96-2**, 4-Hydroxy-TEMPO **2896-70-0**, 4-Oxo-TEMPO
RL: CAT (Catalyst use); NUU (Other use, unclassified); USES (Uses)
(cellulose fiber treated with; making carboxylated cellulose fibers for papermaking)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: NUU (Other use, unclassified); USES (Uses)
(cellulose fiber treated with; making carboxylated cellulose fibers for papermaking)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM D06M023-00
ICS D21C009-00; D21H011-20
INCL 008116100; 008181000; 162009000
CC 43-6 (Cellulose, Lignin, Paper, and Other Wood Products)
IT **2226-96-2**, 4-Hydroxy-TEMPO 2564-83-2, TEMPO 2564-87-6
2896-70-0, 4-Oxo-TEMPO 3229-53-6 3264-93-5 14691-88-4,
4-Amino-TEMPO 14691-89-5 31645-22-4 95407-69-5,
4-Methoxy-TEMPO 98254-32-1 154186-17-1 184160-78-9
RL: CAT (Catalyst use); NUU (Other use, unclassified); USES (Uses)
(cellulose fiber treated with; making carboxylated cellulose fibers for papermaking)
IT 7647-15-6, Sodium bromide, uses **7681-52-9, Sodium hypochlorite** 7722-84-1, Hydrogen peroxide, uses
7726-95-6, Bromine, uses 7738-94-5, Chromic acid (H2CrO4)
7758-19-2, Sodium chlorite 10049-04-4, Chlorine dioxide
16940-66-2, Sodium borohydride 20667-12-3, Silver oxide
335133-08-9, Stabrex ST 70
RL: NUU (Other use, unclassified); USES (Uses)
(cellulose fiber treated with; making carboxylated cellulose fibers for papermaking)
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

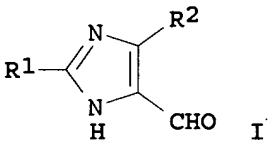
L46 ANSWER 19 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:727104 HCAPLUS

DOCUMENT NUMBER: 137:247693
TITLE: Preparation of 4-formylimidazoles
INVENTOR(S): Isokawa, Sorou; Enomoto, Katashi; Nagai, Naoshi
PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002275162	A2	20020925	JP 2001-73700	200103 15

PRIORITY APPLN. INFO.: JP 2001-73700 200103 15

OTHER SOURCE(S): CASREACT 137:247693; MARPAT 137:247693
GI



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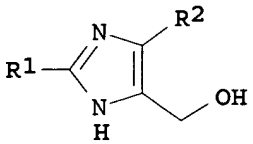
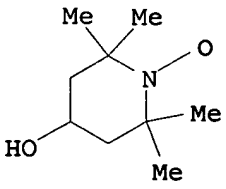


II

AB The compds. I [R1, R2 = H, C1-10 (un)substituted alkyl, aryl, halo] are prepd. by reaction of imidazoles II (R1, R2 = same as I) in the presence of 2,2,6,6-tetramethylpiperidine N-oxyls and cooxidizing agents in org. solvents or water solvents under basic condition.
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine N-oxyl
7681-52-9, **Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(prepn. of formylimidazoles)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07D233-64
ICS C07B061-00
CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine N-oxyl
7681-52-9, **Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(prepn. of formylimidazoles)

L46 ANSWER 20 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:575029 HCAPLUS
DOCUMENT NUMBER: 137:124781
TITLE: Recovery of nitroxyl radicals from oxidation reactions
INVENTOR(S): Thornton, Jeff; Besemer, Arie; Schraven, Bas
PATENT ASSIGNEE(S): SCA Hygiene Products AB, Swed.
SOURCE: PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002059064	A1	20020801	WO 2001-SE2632	200111 29

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

SE 2001000210	A	20020727	SE 2001-210	200101 26
SE 523623	C2	20040504		
EP 1353888	A1	20031022	EP 2001-273493	200111 29

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

US 2002151431	A1	20021017	US 2002-53646	200201 24

PRIORITY APPLN. INFO.:	SE 2001-210	A	200101 26
	US 2001-264018P	P	200101 26
	WO 2001-SE2632	W	200111 29

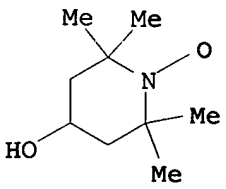
OTHER SOURCE(S): CASREACT 137:124781

AB Stable nitroxyl radicals, such as TEMPO and its derivs., used as catalysts in oxidn. reactions are recovered from oxidn. reactions by hydrophobic interactions with polymers, such as XAD resins, β-cyclodextrin or silica gel. Thus, potato starch in water was treated with 4-acetamido-TEMPO and **NaOCl** at pH 8.5-9.5. The reaction mixt. was run through a column of silica gel, eluted with water. The 6-carboxy starch was eluted first, followed by the 4-acetamido-TEMPO which could be recycled without loss of activity.

IT **2226-96-2P**, 4-Hydroxy TEMPO
RL: PUR (Purification or recovery); RGT (Reagent); PREP (Preparation); RACT (Reactant or reagent)
(recovery of nitroxyl radicals from oxidn. reactions)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C07B063-00

ICS C07D211-94; C07M003-00
CC 21-2 (General Organic Chemistry)
IT **2226-96-2P**, 4-Hydroxy TEMPO 2564-83-2P, TEMPO
6599-87-7P, 1-Piperidinyloxy, 4-acetyloxy-2,2,6,6-tetramethyl-
14691-89-5P, 4-Acetamido TEMPO
RL: PUR (Purification or recovery); RGT (Reagent); PREP (Preparation); RACT (Reactant or reagent)
(recovery of nitroxyl radicals from oxidn. reactions)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 21 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:10405 HCAPLUS
DOCUMENT NUMBER: 136:69591
TITLE: Chlorohydroxyacetone derivative and process for producing optically active chloropropanediol derivative from the same
INVENTOR(S): Taoka, Naoaki; Maeda, Hironobu; Okuro, Kazumi; Toyota, Koichiro; Yasohara, Yoshihiko
PATENT ASSIGNEE(S): Kaneka Corporation, Japan
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

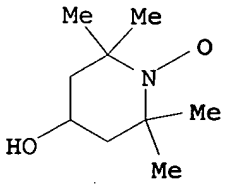
PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2002000585	A1	20020103	WO 2001-JP5363		20010622
W: JP, US					
RW: BE, CH, DE, ES, FR, GB, IE, IT, NL					
EP 1298119	A1	20030402	EP 2001-941182		20010622
R: BE, CH, DE, ES, FR, GB, IT, LI, NL, IE					
US 2002160398	A1	20021031	US 2002-69105		20020226
US 6682916	B2	20040127			
PRIORITY APPLN. INFO.:			JP 2000-192245	A	20000627
			WO 2001-JP5363	W	20010622

OTHER SOURCE(S): CASREACT 136:69591; MARPAT 136:69591
AB This document discloes a process for efficiently producing an optically active chloropropanediol deriv., esp. (S)-1-benzyloxy-3-chloro-2-propanol, which has a high optical purity and is useful as

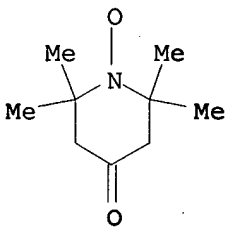
an intermediate for medicines. The process comprises treating an inexpensive racemic chloropropanediol deriv. with a nitroxyl compd. and an oxidizing agent to convert it into a chlorohydroxyacetone deriv. and then stereospecifically reducing the carbonyl group of the chlorohydroxyacetone deriv. by the action of either a carbonyl-reducing enzyme having the ability to stereospecifically reduce the chlorohydroxyacetone deriv. or an optionally treated culture of a microorganism having the ability to yield the carbonyl-reducing enzyme. Thus, an optically active chloropropanediol deriv. is produced.

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidinyl-1-oxyl **2896-70-0 7681-52-9, Sodium hypochlorite**
RL: RGT (Reagent); RACT (Reactant or reagent)
(process for producing optically active chloropropanediol derivs. from chlorohydroxyacetone derivs.)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07C049-175

ICS C07C069-78; C07C045-29; C07C067-29; C07C309-73; C07C303-30; C12P007-02; C12P007-02; C12R001-72; C12P007-02; C12R001-78; C12P007-02; C12R001-84; C12P007-02; C12R001-88; C12P007-02; C12R001-645; C12P007-02; C12R001-05; C12P007-02

CC 23-8 (Aliphatic Compounds)
Section cross-reference(s): 1, 10, 16

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidinyl-1-oxyl 2564-83-2, TEMPO **2896-70-0** 3225-26-1, 4-Benzoyloxy-2,2,6,6-tetramethylpiperidinyl-1-oxyl **7681-52-9**, **Sodium hypochlorite** 14691-89-5, 4-Acetylamino-2,2,6,6-tetramethylpiperidinyl-1-oxyl 95407-69-5
RL: RGT (Reagent); RACT (Reactant or reagent)
(process for producing optically active chloropropanediol derivs. from chlorohydroxyacetone derivs.)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 22 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:631910 HCAPLUS
DOCUMENT NUMBER: 135:195510
TITLE: Preparation of carbamazepine
INVENTOR(S): Citterio, Attilio; Breviglieri, Gabriele; Bruno, Giacomo
PATENT ASSIGNEE(S): Farchemia S.r.l., Italy
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1127877	A2	20010829	EP 2001-103475	200102 14
EP 1127877	A3	20021127		
EP 1127877	B1	20040602		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
IT 1317854	B1	20030715	IT 2000-MI345	200002 25
AT 268325	E	20040615	AT 2001-103475	200102 14
PT 1127877	T	20040831	PT 2001-103475	200102 14
ES 2219447	T3	20041201	ES 2001-1103475	200102 14
US 6384217	B1	20020507	US 2001-788048	200102

PRIORITY APPLN. INFO.: IT 2000-MI345 A 17
200002
25

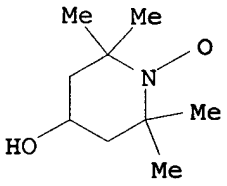
OTHER SOURCE(S): CASREACT 135:195510; MARPAT 135:195510

AB The title process comprises a method which does not employ 9,10-unsatd. precursors. Thus, 5-cyano-10,11-dihydro-5H-dibenz[b,f]azepine was brominated and the product hydroxylated to give 5-cyano-10 hydroxy-10,11-dihydro-5H-dibenz[b,f]azepine which was converted to the title compd.

IT **2226-96-2**
RL: CAT (Catalyst use); USES (Uses)
(prepn. of carbamazepine from 5-cyano-10,11-dihydro-5H-dibenz[b,f]azepine)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of carbamazepine from 5-cyano-10,11-dihydro-5H-dibenz[b,f]azepine)

RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07D223-28

CC 27-21 (Heterocyclic Compounds (One Hetero Atom))

IT **2226-96-2** 2564-83-2, 2,2,6,6-Tetramethylpiperidine nitroxide
RL: CAT (Catalyst use); USES (Uses)
(prepn. of carbamazepine from 5-cyano-10,11-dihydro-5H-dibenz[b,f]azepine)

IT 107-71-1, tert-Butyl peracetate 110-22-5, Diacetyl peroxide 533-01-7, Copper(II) benzoate 614-45-9, tert-Butyl perbenzoate 4180-12-5, Copper acetate 7664-93-9, Sulfuric acid, reactions **7681-52-9, Sodium hypochlorite** 221908-80-1

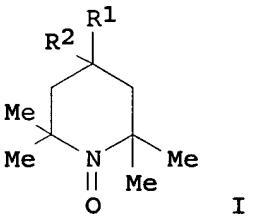
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of carbamazepine from 5-cyano-10,11-dihydro-5H-dibenz[b,f]azepine)

L46 ANSWER 23 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:441242 HCAPLUS
DOCUMENT NUMBER: 135:19380
TITLE: Preparation of 3-methyl-2,4-nonanedione
INVENTOR(S): Kato, Yasushi; Yamaguchi, Tetsuo; Yuasa, Yoshifumi; Suganuma, Toshikazu
PATENT ASSIGNEE(S): Takasago Perfumery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001163818	A2	20010619	JP 1999-352517	19991213

PRIORITY APPLN. INFO.: JP 1999-352517 19991213

OTHER SOURCE(S): CASREACT 135:19380; MARPAT 135:19380
GI



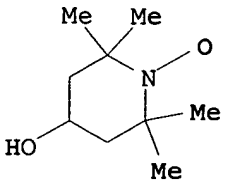
I

AB Title compd. is prepd. by reaction of n-hexylaldehyde with Me Et ketone in the presence of base catalysts in aq. solns. and reaction of 3-methyl-4-hydroxy-2-nonanone with hypohalogenites in the presence of nitroxyle radicals I (R1 = H, halo, OH, C1-4 alkyl, C1-4 alkoxy, etc.; R2 = H, C1-4 alkyl, etc.) and metal halides. Me Et ketone was reacted with n-hexylaldehyde in the presence of NaOH in H2O at 20-25° for 23 h to give 69% 3-methyl-4-hydroxy-2-nonanone, which was reacted with **sodium hypochlorite** in the presence of NaHCO3, KBr, 4-benzoyloxy-2,2,6,6-tetramethylpiperidine-1-oxyl in H2O-CH2Cl2 at 3-7° for 2 h to give 73.5% 3-methyl-2,4-nonanedione.

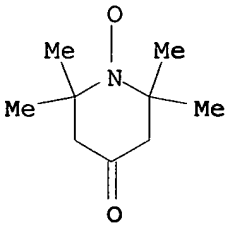
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl
2896-70-0, 4-Oxo-2,2,6,6-tetramethylpiperidine-1-oxyl

RL: CAT (Catalyst use); USES (Uses)
(oxidn. catalyst; prepn. of methylnonanedione by aldol condensation of hexylaldehyde with ketone and oxidn.)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of methylnonanedione by aldol condensation of hexylaldehyde with ketone and oxidn.)

RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07C045-29
ICS B01J023-02; B01J023-04; B01J031-02; C07C045-30; C07C045-72; C07C049-12; C07B061-00
CC 23-15 (Aliphatic Compounds)
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl 2564-83-2, 2,2,6,6-Tetramethylpiperidine-1-oxyl **2896-70-0**, 4-Oxo-2,2,6,6-tetramethylpiperidine-1-oxyl 3225-26-1, 4-Benzoyloxy-2,2,6,6-tetramethylpiperidine-1-oxyl
RL: CAT (Catalyst use); USES (Uses)
(oxidn. catalyst; prepn. of methylnonanedione by aldol

condensation of hexylaldehyde with ketone and oxidn.)
IT 66-25-1, n-Hexylaldehyde 78-93-3, Methyl ethyl ketone, reactions
7681-52-9, Sodium hypochlorite
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of methylnonanedione by aldol condensation of hexylaldehyde with ketone and oxidn.)

L46 ANSWER 24 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:360248 HCAPLUS
DOCUMENT NUMBER: 134:354735
TITLE: Metal-crosslinkable oxidized cellulose-containing fibrous materials, their manufacture and products
INVENTOR(S): Jaschinski, Thomas
PATENT ASSIGNEE(S): SCA Hygiene Products G.m.b.H., Germany
SOURCE: PCT Int. Appl., 75 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

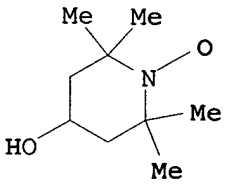
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001034903	A1	20010517	WO 2000-EP11047	200011 08
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 19953591	A1	20010517	DE 1999-19953591	199911 08
US 6409881	B1	20020625	US 2000-706764	200011 07
PRIORITY APPLN. INFO.:			DE 1999-19953591 A	199911 08

AB Crosslinked cellulose-contg. fibrous material, where hydroxy groups are oxidized at the C(6) of glucose units of the cellulose into aldehyde and/or carboxy groups crosslinked with a metal-contg. crosslinking agent selected from transition metals of Group IVb (preferably Zr), Vb VIb, VIIb and VIII, Al and Zn, used in a paper or nonwoven (product), e.g. tissue (product) of high wet and dry strength. Thus, bleached hardwood sulfite pulp was treated for 60

min under acidic conditions with 4-hydroxy-TEMPO (1.00 g/50 g dry fibrous material) using 5% of 13% **NaOCl** as a primary oxidizing agent, and used to prep. test sheets (basis wt. 80 g/m2) having wt. 2.56 g, breaking strength 23.94 (dry) and 4.687 N/15 mm (wet), tear length 1980.1 (dry) and 387.7 m (wet), and rel. wet strength 19.6%. Upon crosslinking treatment with aq. 2% ammonium zirconium carbonate soln., the test sheet had breaking strength 31.64 (dry) and 8.502 N/15 mm (wet), tear length 2582.1 (dry) and 693.1 m (wet), and rel. wet strength 26.9%.

IT **2226-96-2**, 4-Hydroxy-Tempo **7681-52-9**, **Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. and crosslinking of cellulose-contg. fibrous materials for paper products having high wet and dry strength)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM D21C009-00
ICS C08B015-02; D21H011-20
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
ST **sodium hypochlorite** TEMPO oxidn cellulose; ammonium zirconium carbonate crosslinking oxidized cellulose
IT **2226-96-2**, 4-Hydroxy-Tempo 2564-83-2, Tempo **7681-52-9**, **Sodium hypochlorite** 10028-15-6, Ozone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. and crosslinking of cellulose-contg. fibrous materials for paper products having high wet and dry strength)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 25 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:360048 HCAPLUS

DOCUMENT NUMBER: 134:368508
TITLE: Selective oxidation of primary alcohol functions into carbaldehyde groups in monosaccharides and polysaccharides under acidic conditions
INVENTOR(S): Gunnars, Susanna
PATENT ASSIGNEE(S): SCA Hygiene Products Zeist B.V., Neth.
SOURCE: PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001034657	A1	20010517	WO 2000-NL812	20001108
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001017411	A5	20010606	AU 2001-17411	20001108
EP 1237933	A1	20020911	EP 2000-980111	20001108
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003516939	T2	20030520	JP 2001-537368	20001108
US 6770755	B1	20040803	US 2002-129527	20020913
PRIORITY APPLN. INFO.:			EP 1999-203726 A	19991108
			WO 2000-NL812 W	20001108

AB The oxidn. was carried out in the presence of a di-tertiary-alkyl nitroxyl such as 4-hydroxy-2,2,6,6-tetramethylpiperidin-1-oxyl and optional **sodium hypochlorite** in an aq. reaction medium at a pH < 7. The process exhibits a preference of primary

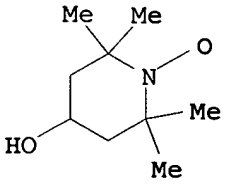
over secondary alc. functions and is particularly advantageous for oxidizing primary hydroxy groups in carbohydrates such as starch into carbaldehyde groups rather than carboxylic groups. The selectivities of primary over secondary alc. functions and of alc. to aldehyde over aldehyde to carboxylic acid can be effected by selecting specific di-tertiary-alkyl nitroxyl analogs and by carrying out the oxidn. at different conditions (temp., pH and rate of addn. of oxidizing agent). The oxidized products can be used as chelating agents for metals and the like and as absorbent materials.

IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidizing agent; Selective oxidn. of primary alc. functions into carbaldehyde groups in monosaccharides and polysaccharides)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidin-1-oxyl
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidizing agent; Selective oxidn. of primary alc. functions into carbaldehyde groups with di-tertiary-alkyl nitroxyl and hypochlorite)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C08B031-18
ICS C08B015-04; C07H007-033
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 33
IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidizing agent; Selective oxidn. of primary alc. functions into carbaldehyde groups in monosaccharides and polysaccharides)
IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidin-1-oxyl
2564-83-2, 2,2,6,6-Tetramethylpiperidin-1-oxyl 6599-87-7,
4-Acetoxy-2,2,6,6-tetramethylpiperidin-1-oxyl 14691-89-5,
4-Acetamido-2,2,6,6-tetramethylpiperidin-1-oxyl
RL: RCT (Reactant); RACT (Reactant or reagent)

(oxidizing agent; Selective oxidn. of primary alc. functions into carbaldehyde groups with di-tertiary-alkyl nitroxyl and hypochlorite)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 26 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:360047 HCAPLUS
DOCUMENT NUMBER: 134:354734
TITLE: Oxidized polysaccharides and products made thereof
INVENTOR(S): Jaschinski, Thomas; Gunnars, Susanna; Besemer, Arie Cornelis; Bragd, Petter
PATENT ASSIGNEE(S): SCA Hygiene Products G.m.b.H., Germany
SOURCE: PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001034656	A1	20010517	WO 2000-EP11048	200011 08
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 19953589	A1	20010523	DE 1999-19953589	199911 08
DE 19953589	B4	20050525		
BR 2000015245	A	20020723	BR 2000-15245	200011 08
EP 1228099	A1	20020807	EP 2000-972899	200011 08
EP 1228099	B1	20030924		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, IE, SI, LT, LV, FI, RO, MK, CY, AL				
JP 2003514077	T2	20030415	JP 2001-537367	200011 08
AT 250633	E	20031015	AT 2000-972899	200011

				08
US 6635755	B1	20031021	US 2000-707971	200011 08
TW 570930	B	20040111	TW 2000-89123611	200011 08
ES 2208431	T3	20040616	ES 2000-972899	200011 08
AU 777759	B2	20041028	AU 2001-11466	200011 08
ZA 2002003058	A	20030717	ZA 2002-3058	200204 17
US 2004010137	A1	20040115	US 2003-437117	200305 14
US 6987181	B2	20060117		
PRIORITY APPLN. INFO.:			DE 1999-19953589 A	199911 08
			US 2000-707971 A3	200011 08
			WO 2000-EP11048 W	200011 08

AB The present invention relates to a polysaccharide having functional groups, wherein said groups are aldehyde groups formed at positions C2 and/or C3 as well as at position C6 of the anhydroglucose units of the polysaccharide chain. Preferably, the polysaccharide is a cellulosic fibrous material, the primary and secondary hydroxyl groups of which are at least partially oxidized to aldehyde groups by means of TEMPO oxidn. and periodate oxidn. The invention also relates to a paper or nonwoven comprising the above polysaccharide. According to the invention a relative wet strength of greater than 10% can be achieved.

IT **7681-52-9, Sodium hypochlorite**
RL: MOA (Modifier or additive use); USES (Uses)
(co-oxidant; oxidized polysaccharides and products made thereof)

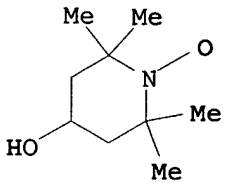
RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: MOA (Modifier or additive use); USES (Uses)
(oxidant; oxidized polysaccharides and products made thereof)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C08B015-02
ICS C08B031-18; C08B033-08; C08B035-08
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 40
IT **7681-52-9**, **Sodium hypochlorite**
RL: MOA (Modifier or additive use); USES (Uses)
(co-oxidant; oxidized polysaccharides and products made thereof)
IT **2226-96-2**, 4-Hydroxy-TEMPO 7790-28-5, Sodium periodate
14691-89-5, 4-Acetamido-TEMPO
RL: MOA (Modifier or additive use); USES (Uses)
(oxidant; oxidized polysaccharides and products made thereof)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

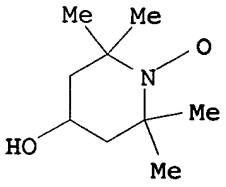
L46 ANSWER 27 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:330920 HCAPLUS
DOCUMENT NUMBER: 135:122663
TITLE: TEMPO-derivatives as catalysts in the oxidation of primary alcohol groups in carbohydrates
AUTHOR(S): Bragd, Petter L.; Besemer, Arie C.; van Bekkum, Herman
CORPORATE SOURCE: SCA Hygiene Products AB, Zeist, 3704 AJ, Neth.
SOURCE: Journal of Molecular Catalysis A: Chemical (2001), 170(1-2), 35-42
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:122663
AB Primary hydroxyl groups in aq. starch, pullulan and Me α-D-glucopyranoside were oxidized to the corresponding carboxylic acid functionalities by TEMPO-(4-X)-derivs. using **sodium hypochlorite** as the primary oxidant. All the combinations of substrates and nitroxyl radicals resulted in stoichiometric conversions, and the selectivity for oxidn. of primary hydroxyls was high. Some depolymn. occurred throughout the oxidn., esp. when 4-acetoxy and 4-mesyl-TEMPO were used. The pH window of the activity of the inexpensive 4-acetamido-TEMPO was

found to be substantially lower from that of the other tested TEMPO-derivs.; thus allowing milder reaction conditions. At pH 8, the rate of oxidn. was ca. two times higher when 4-acetamido-TEMPO was used compared to the other catalysts.

IT **2226-96-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(TEMPO-derivs. as catalysts in the oxidn. of primary alc. groups in carbohydrates)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



CC 33-1 (Carbohydrates)
Section cross-reference(s): 22

IT 97-30-3, Methyl α-D-glucopyranoside **2226-96-2**
9005-25-8D, Starch, potato, reactions 9057-02-7, Pullulan
RL: RCT (Reactant); RACT (Reactant or reagent)
(TEMPO-derivs. as catalysts in the oxidn. of primary alc. groups in carbohydrates)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 28 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:300943 HCAPLUS
DOCUMENT NUMBER: 134:312682
TITLE: Method of making carboxylated cellulose fibers and products
INVENTOR(S): Jewell, Richard A.; Komen, Joseph Lincoln; Su, Bing; Weerawarna, S. Ananda; Li, Yong
PATENT ASSIGNEE(S): Weyerhaeuser Company, USA
SOURCE: PCT Int. Appl., 52 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001029309	A1	20010426	WO 2000-US27837	20001006

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH,

GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6379494	B1	20020430	US 1999-418909	19991015
CA 2384701	AA	20010426	CA 2000-2384701	20001006
CA 2384701	C	20050329		
EP 1238142	A1	20020911	EP 2000-970682	20001006

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL

JP 2003512540	T2	20030402	JP 2001-532283	20001006

PRIORITY APPLN. INFO.:	US 1999-418909 A	19991015
	US 1999-272137 A2	19990319
	WO 2000-US27837 W	20001006

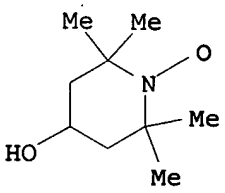
OTHER SOURCE(S): MARPAT 134:312682

AB A method of making highly carboxylated cellulose fibers whose fiber strength and d.p. is not significantly sacrificed comprises (1) oxidizing the cellulose fiber (kraft pulp) with a cyclic nitroxide free radical compd. as a primary oxidant and a hypohalite salt as a secondary oxidant under aq. alk. conditions; and (2) treating the oxidized cellulose against d.p. loss in aq. suspension with a stabilizing agent selected from the group consisting of reducing agent and tertiary oxidizing agent. The product is esp. useful as a papermaking fiber where it contributes strength and has a higher attraction for cationic additives, and it is also useful as an additive to recycled fiber to increase strength.

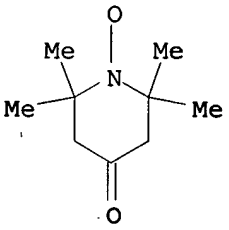
IT **2226-96-2**, 4-Hydroxy-TEMPO **2896-70-0**, 4-Oxo-TEMPO
RL: CAT (Catalyst use); NUU (Other use, unclassified); USES (Uses)
(cellulose fiber treated with; method of making carboxylated cellulose fibers and products for papermaking)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: NUU (Other use, unclassified); USES (Uses)
(cellulose fiber treated with; method of making carboxylated cellulose fibers and products for papermaking)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM D21C009-00
ICS D21H011-20; C08B015-04
CC 43-6 (Cellulose, Lignin, Paper, and Other Wood Products)
IT **2226-96-2**, 4-Hydroxy-TEMPO 2564-83-2, TEMPO 2564-87-6
2896-70-0, 4-Oxo-TEMPO 3229-53-6 3264-93-5 14691-88-4,
4-Amino-TEMPO 14691-89-5 31645-22-4 95407-69-5,
4-Methoxy-TEMPO 98254-32-1 154186-17-1 184160-78-9
RL: CAT (Catalyst use); NUU (Other use, unclassified); USES (Uses)
(cellulose fiber treated with; method of making carboxylated cellulose fibers and products for papermaking)
IT 7647-15-6, Sodium bromide, uses **7681-52-9, Sodium hypochlorite** 7722-84-1, Hydrogen peroxide, uses
7758-19-2, Sodium chlorite 10049-04-4, Chlorine dioxide
16940-66-2, Sodium borohydride 335133-08-9, Stabrex ST 70
RL: NUU (Other use, unclassified); USES (Uses)
(cellulose fiber treated with; method of making carboxylated cellulose fibers and products for papermaking)
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR

THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 29 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:31441 HCAPLUS
DOCUMENT NUMBER: 134:100641
TITLE: Process for preparing benzyloxyacetaldehyde compounds
INVENTOR(S): Wang, Weigi; Kawamoto, Hiroshi; Maeda, Chiharu; Matsuda, Michio; Imamiya, Yoshiyuki
PATENT ASSIGNEE(S): Sumika Fine Chemicals Co., Ltd., Japan
SOURCE: PCT Int. Appl., 20 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

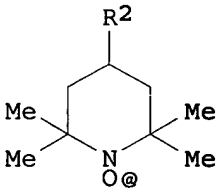
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001002333	A1	20010111	WO 2000-JP3791	20000612

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

JP 2001011007	A2	20010116	JP 1999-187165	19990701

PRIORITY APPLN. INFO.: JP 1999-187165 A 19990701

OTHER SOURCE(S): CASREACT 134:100641; MARPAT 134:100641
GI



II

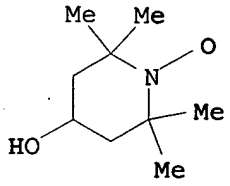
AB R1C6H4CH2OCH2CHO (I; R1 = H, MeO) were prepd. by oxidizing R1C6H4CH2OCH2CH2OH with **NaOCl** in the presence of a

1-piperidinoxyl compd. (II; R2 = H, OH, NHAc, methacryloyloxy). Thus, a mixt. of 18.2 g 4-MeOC6H4CH2OCH2CH2OH, 50 g EtOAc, 65 g 12% aq. **NaOCl**, 3 g NaHCO3, and 172 mg II (R2 = OH) was stirred vigorously at pH 8-10.5 to give a 90.5% yield of I (R1 = 4-MeO). I are useful as intermediates for pharmaceuticals specifically inhibiting proliferation of HIV.

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethyl-1-piperidinyloxy
RL: CAT (Catalyst use); USES (Uses)
(oxidn. of (benzyloxy)ethanols)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C07C045-30
ICS C07C047-277; C07C041-01

CC 25-15 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethyl-1-piperidinyloxy
15051-46-4
RL: CAT (Catalyst use); USES (Uses)
(oxidn. of (benzyloxy)ethanols)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 30 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:805415 HCAPLUS

DOCUMENT NUMBER: 134:107110

TITLE: New Approach to Rapid Generation and Screening of Diverse Catalytic Materials on Electrode Surfaces

AUTHOR(S): Siu, Tung; Yekta, Shahla; Yudin, Andrei K.

CORPORATE SOURCE: Department of Chemistry, University of Toronto, Toronto, ON, M5S 3H6, Can.

SOURCE: Journal of the American Chemical Society (2000), 122(48), 11787-11790
CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

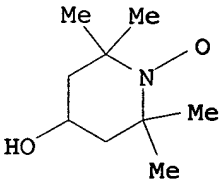
AB This paper describes a general approach to rapid generation and screening of catalytic materials on electrode surfaces. The properties of the corresponding polymers, including catalytic performance, can be modulated by varying the monomer feed ratios, monomer concns., and applied polymn. potential. Thus, the generation of the polymeric TEMPO (2,2,6,6-tetramethylpiperidin-1-yloxy) catalysts was performed by electrochem. copolymn. of

2,2'-bithiophene with the TEMPO catalyst precursors contg. pyrrole side chains. A library of catalyst films was obtained over a wide range of bithiophene/pyrrole ratios upon repeated scanning of the applied potential from +0.5 to +1.4 V (vs. Ag/AgCl). The resulting catalyst films were used in both chem. and electrochem. oxidn. of primary alcs. to aldehydes.

IT **2226-96-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with (pyrrolyl)propionic acid)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 23, 25, 27, 35, 36, 67

IT Oxidation
(of alcs. by **NaOCl**/NaBr in presence of ((pyrrolyl)propionylamino)tetramethylpiperidinyloxy-bithiophene copolymer)

IT 104-54-1 106-21-8, 3,7-Dimethyl-1-octanol 111-87-5, 1-Octanol, reactions 112-30-1, 1-Decanol 112-53-8, 1-Dodecanol 1124-63-6, Cyclohexanepropanol
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. by **NaOCl**/NaBr using ((pyrrolyl)propionylamino)tetramethylpiperidinyloxy-bithiophene copolymer catalyst)

IT 100-51-6, Benzyl alcohol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. by **NaOCl**/NaBr using ((pyrrolyl)propionylamino)tetramethylpiperidinyloxy-bithiophene copolymer catalyst and electrooxidn. using ((pyrrolyl)propionyloxy)tetramethylpiperidinyloxy-bithiophene copolymer catalyst)

IT 104-55-2 112-31-2, Decanal 112-54-9, 1-Dodecanal 124-13-0, Octanal 4361-28-8, Cyclohexanepropanal 5988-91-0, 3,7-Dimethyl-1-octanal
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. by oxidn. of alc. by **NaOCl**/NaBr using ((pyrrolyl)propionylamino)tetramethylpiperidinyloxy-bithiophene copolymer catalyst)

IT **2226-96-2** 14691-88-4, 4-Amino-2,2,6,6-tetramethylpiperidinyloxy
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with (pyrrolyl)propionic acid)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE

IN THE RE FORMAT

L46 ANSWER 31 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:608782 HCAPLUS
DOCUMENT NUMBER: 133:209532
TITLE: Oxidized cellulose-containing fibrous materials, preparation thereof and products therefrom
INVENTOR(S): Jaschinski, Thomas; Gunnars, Susanna; Besemer, Arie Cornelis; Bragd, Petter; Jetten, Jan Matthijs; Van den Dool, Ronald; Van Hartingsveldt, Willem
PATENT ASSIGNEE(S): Sca Hygiene Products G.m.b.H., Germany; Sca Hygiene Products Zeist B.V.
SOURCE: PCT Int. Appl., 75 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000050462	A1	20000831	WO 2000-EP1538	20000224
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 19953590	A1	20010517	DE 1999-19953590	19991108
EP 1155040	A1	20011121	EP 2000-907622	20000224
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
BR 2000008378	A	20020219	BR 2000-8378	20000224
TR 200102472	T2	20020321	TR 2001-200102472	20000224
JP 2002537503	T2	20021105	JP 2000-601040	20000224
AU 768725	B2	20040108	AU 2000-29145	20000224
AU 2000029145	A5	20000914		

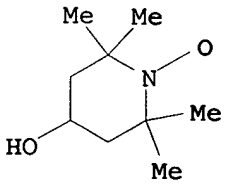
US 2002098317	A1	20020725	US 2001-931621	200108 16
US 6824645	B2	20041130		
PRIORITY APPLN. INFO.:			EP 1999-200537	A 199902 24
			DE 1999-19953590	A 199911 08
			WO 2000-EP1538	W 200002 24

AB A cellulose-contg. fibrous material is prepd. by oxidizing hydroxy groups at the C(6) of glucose units of cellulose into aldehyde and/or carboxy groups, and used to prep. paper or nonwoven products, esp. tissue products. The paper or nonwoven products display excellent strength properties. Thus, bleached hardwood sulfite pulp was treated for 60 min under acidic conditions with 4-hydroxy-TEMPO (1.00 g/50 g dry fibrous material) using 5% of 13% **NaOCl** as a primary oxidizing agent, and used to prep. test sheets (basis wt. 80 g/m2) having wt. 2.56 g, breaking strength 23.94 (dry) and 4.687 N/15 mm (wet), tear length 1980.1 (dry) and 387.7 m (wet), and rel. wet strength 19.6%, compared with 3.04, 18.48, 0.151, 1285.7, 10.5, and 0.8, resp., for a nonoxidized pulp.

IT **2226-96-2**, 4-Hydroxy-TEMPO
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(oxidized cellulose-contg. fibrous materials, prepn. thereof and products therefrom)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidized cellulose-contg. fibrous materials, prepn. thereof and products therefrom)

RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C08B015-02
ICS C08B015-04; D21H011-20
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
ST cellulose oxidn aldehydocellulose carboxycellulose paper strength; **sodium hypochlorite** TEMPO oxidn cellulose; piperidinyloxy **sodium hypochlorite** oxidn cellulose
IT **2226-96-2**, 4-Hydroxy-TEMPO 2564-83-2, TEMPO 9003-99-0, Peroxidase 14691-88-4, 4-Amino-TEMPO 14691-89-5, 4-Acetamido-TEMPO
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(oxidized cellulose-contg. fibrous materials, prepn. thereof and products therefrom)
IT **7681-52-9, Sodium hypochlorite**
10028-15-6, Ozone, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidized cellulose-contg. fibrous materials, prepn. thereof and products therefrom)
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 32 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:194054 HCAPLUS
DOCUMENT NUMBER: 130:224554
TITLE: Resin containing adsorbed catalyst for electively oxidizing primary hydroxyl groups of organic compounds
INVENTOR(S): Ochi, Kiyoshige; Takahashi, Hidenori; Tanaka, Hideki; Sugiyama, Hiroshi; Fujisaki, Isao; Ori, Kazutomo
PATENT ASSIGNEE(S): Chugai Seiyaku Kabushiki Kaisha, Japan
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9912644	A1	19990318	WO 1998-JP3877	19980831

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW,

	MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA	2302552	AA	19990318	CA 1998-2302552	199808 31
AU	9888879	A1	19990329	AU 1998-88879	199808 31
JP	11147043	A2	19990602	JP 1998-245452	199808 31
EP	1027931	A1	20000816	EP 1998-940635	199808 31
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
TW	482696	B	20020411	TW 1998-87114578	199809 02
US	6335464	B1	20020101	US 2000-508176	200003 08
PRIORITY APPLN. INFO.:				JP 1997-243015 A	199709 08
				WO 1998-JP3877 W	199808 31

AB A process for selectively oxidizing primary hydroxyl groups of org. compds. is characterized by reacting an electrolytically oxidized halogen-contg. compd. with an org. compd. having a primary hydroxyl group in the presence of a resin contg. an adsorbed oxidized amine. Thus, TEMPO 150 mg was mixed with and absorbed (≥98.0) by polyacrylate resin Diaion HP 2MG 75 mL, into which methyl-α-D-glucopyranoside 9.7 g was added, which was oxidized to methyl-α-D-glucopyranosiduronic acid with dropping **sodium hypochlorite.**

IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. catalyst; resin contg. adsorbed catalyst for electively oxidizing primary hydroxyl groups of org. compds.)

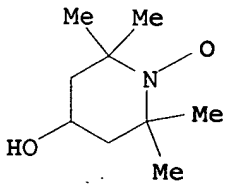
RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IT **2226-96-2**, 4-Hydroxy TEMPO
RL: CAT (Catalyst use); USES (Uses)
(resin contg. adsorbed catalyst for electively oxidizing primary hydroxyl groups of org. compds.)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM B01J031-06
ICS C07H007-033; C08L101-00; C08K005-32
CC 44-6 (Industrial Carbohydrates)
IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. catalyst; resin contg. adsorbed catalyst for electively oxidizing primary hydroxyl groups of org. compds.)
IT **2226-96-2**, 4-Hydroxy TEMPO 2564-83-2, TEMPO 3225-26-1
9003-53-6, Polystyrene 9060-05-3, Amberlite XAD 2 14691-89-5, 4-Acetamido-TEMPO 98225-81-1, Diaion SP 207 99549-82-3, Diaion HP 2MG
RL: CAT (Catalyst use); USES (Uses)
(resin contg. adsorbed catalyst for electively oxidizing primary hydroxyl groups of org. compds.)
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 33 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:65311 HCAPLUS
DOCUMENT NUMBER: 130:124823
TITLE: Preparation of hydroxymalonic acid by oxidation of glycerin or glyceric acid
INVENTOR(S): Yokoi, Kenji; Nakagawa, Ryuichi
PATENT ASSIGNEE(S): Lion Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11021266	A2	19990126	JP 1997-187606	19970627

PRIORITY APPLN. INFO.: JP 1997-187606 19970627

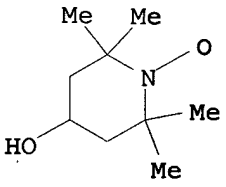
OTHER SOURCE(S): CASREACT 130:124823; MARPAT 130:124823

AB Hydroxymalonic acid (I) is prepd. bv oxidn. of glycerin and/or glyceric acid with Cl-contg. oxidizing agents in the presence of nitroxide radicals and alkali metal halides and/or alk. earth halides. An aq. **NaClO** soln. was added dropwise to a mixt. of an aq. glycerin soln., 2,2,6,6-tetramethylpiperidin-1-oxyl, and an aq. NaBr soln. at 10° and pH 8-9 to give a product contg. 85% I, vs. 58% for a control using no NaBr.

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidin-1-oxyl
RL: CAT (Catalyst use); USES (Uses)
(prepn. of hydroxymalonic acid by oxidn. of glycerin or glyceric acid using nitroxide radical and alkali or alk. earth halides)

RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of hydroxymalonic acid by oxidn. of glycerin or glyceric acid using nitroxide radical and alkali or alk. earth halides)

RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07C059-245
ICS C07C051-275

CC 23-16 (Aliphatic Compounds)

IT **2226-96-2**, 4-Hydroxy-2,2,6,6-tetramethylpiperidin-1-oxyl
2564-83-2, 2,2,6,6-Tetramethylpiperidin-1-oxyl 7447-40-7,
Potassium chloride, uses 7647-15-6, Sodium bromide, uses
7758-02-3, Potassium bromide, uses 7782-50-5, Chlorine, uses
7789-48-2, Magnesium bromide
RL: CAT (Catalyst use); USES (Uses)
(prepn. of hydroxymalonic acid by oxidn. of glycerin or glyceric acid using nitroxide radical and alkali or alk. earth halides)

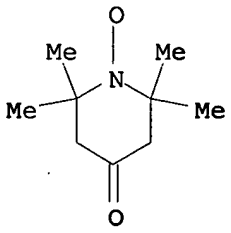
IT 56-81-5, Glycerin, reactions 473-81-4, Glyceric acid
7681-52-9, Sodium hypochlorite
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of hydroxymalonic acid by oxidn. of glycerin or glyceric acid using nitroxide radical and alkali or alk. earth halides)

L46 ANSWER 34 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:305663 HCAPLUS
DOCUMENT NUMBER: 127:17892
TITLE: Synthesis of α- and β-D-glucopyranuronate 1-phosphate and α-D-glucopyranuronate 1-fluoride: intermediates in the synthesis of D-glucuronic acid from starch
AUTHOR(S): Heeres, Andre; Van Doren, Henk A.; Gotlieb, Kees F.; Bleeker, Ido P.
CORPORATE SOURCE: Netherlands Institute for Carbohydrate Research TNO, Groningen, NL-9723 CC, Neth.
SOURCE: Carbohydrate Research (1997), 299(4), 221-227
CODEN: CRBRAT; ISSN: 0008-6215
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The title uronates were prepd. by 2,2,6,6-tetramethyl-1-piperidinyloxy (TEMPO) catalyzed **sodium hypochlorite** oxidn. of α- and β-D-glucopyranosyl phosphate (α- / β-Glc-1-P) and α-D-glucopyranosyl fluoride (α-Glc-1-F). Quant. recovery of the TEMPO catalyst was achieved by azeotropic distn. of a small part of the reaction mixt. Also, a heterogeneous catalyst system was prepd. by immobilization of 4-oxo-tetramethyl-1-piperidinyloxy (OTEMPO) on amino-functionalized silica. The protected uronates were hydrolyzed to yield D-glucuronate. Since α- and β-Glc-1-P and α-Glc-1-F can be obtained from starch in one step, D-glucuronic acid is now available from starch in a convenient three-step sequence.

IT **2896-70-0D**, OTEMPO, aminopropylsilica bound
RL: CAT (Catalyst use); USES (Uses)
(prepn. of glucopyranuronate phosphate and fluoride intermediates in the prepn. of glucuronic acid from starch)

RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)

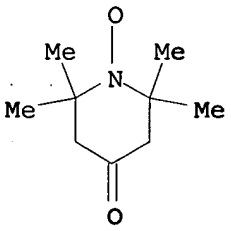


CC 33-8 (Carbohydrates)
IT **2896-70-0D**, OTEMPO, aminopropylsilica bound 9001-89-2, e.c. 3.1.3.26
RL: CAT (Catalyst use); USES (Uses)
(prepn. of glucopyranuronate phosphate and fluoride intermediates in the prepn. of glucuronic acid from starch)
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 35 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:27249 HCAPLUS
DOCUMENT NUMBER: 124:137991
TITLE: Singlet oxygen-trapping reaction as a method of 1O2 detection: role of some reducing agents
AUTHOR(S): Dzwigaj, Stanislaw; Pezerat, Henri
CORPORATE SOURCE: Lab. Reactivite Surface, Univ. Pierre et Marie Curie, Paris, 75252, Fr.
SOURCE: Free Radical Research (1995), 23(2), 103-15
CODEN: FRARER; ISSN: 1071-5762
PUBLISHER: Harwood
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The prodn. of singlet oxygen by H2O2 disproportionation and via the oxidn. of H2O2 by **NaOCl** in a neutral medium was monitored by spin trapping with 2,2,6,6-tetramethyl-4-piperidone (TMPone). The singlet oxygen formed in both reactions oxidized TMPone to give nitroxide radicals. However, the prodn. of nitroxide radicals was relatively small considering the concns. of H2O2 and **NaOCl** used in the reaction systems. Addn. of electron donating agents: ascorbate, Fe2+ and desferrioxamine leads to an increase in the prodn. of nitroxide radicals. The authors assumed that a very slow step of the reaction sequence, the homolytic breaking of the O-O bond of N-hydroperoxide (formed as an intermediate product during the reaction of 1O2 with TMPone) could be responsible for the relatively small prodn. of nitroxide radicals. Electron donating agents added to the reaction system probably raise the rate of the hydroperoxide decompn. by allowing a more rapid heterolytic cleavage of the O-O bond leading to a greater prodn. of nitroxide radicals. The largest effect was obsd. in the presence of desferrioxamine. Its participation in this process is proved by the concomitant appearance of desferrioxamine nitroxide radicals. The results obtained demonstrate that the method proposed by several authors and tested in this study to detect singlet oxygen is not convenient for precise quant. studies. The reactivity of TMPone towards O2.-/HO2.

and .OH was also investigated. Both O2.-/HO2. and .OH radicals formed in a phosphate buffer soln. (pH 7.4, 37°), resp. by a xanthine-oxidase/hypoxanthine system and via H2O2-UV irradn., do not oxidize 2,2,6,6 tetramethyl-4-piperidone to nitroxide radicals.

IT **2896-70-0**
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative) (singlet oxygen-trapping reaction for 1O2 detection and role of some reducing agents)
RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent) (singlet oxygen-trapping reaction for 1O2 detection and role of some reducing agents)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

CC 4-1 (Toxicology)
IT **2896-70-0**
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative) (singlet oxygen-trapping reaction for 1O2 detection and role of some reducing agents)
IT **7681-52-9, Sodium hypochlorite**
7722-84-1, Hydrogen peroxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent) (singlet oxygen-trapping reaction for 1O2 detection and role of some reducing agents)

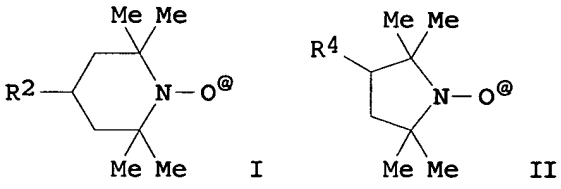
L46 ANSWER 36 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:175907 HCAPLUS
DOCUMENT NUMBER: 122:9868
TITLE: Preparation of ether bond-containing aldehydes
INVENTOR(S): Suzuki, Junji
PATENT ASSIGNEE(S): Nippon Soda Co, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06211827	A2	19940802	JP 1993-20847	19930114

PRIORITY APPLN. INFO.: JP 1993-20847 19930114

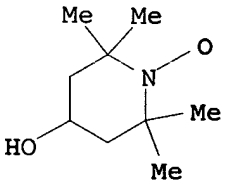
OTHER SOURCE(S): CASREACT 122:9868; MARPAT 122:9868
GI



AB R1CHO (R1 = O-contg. 4- to 7-membered ring) are prepd. by oxidn. of R1CH2OH (R1 = same as above) with hypochlorites in a mixed solvent system comprising (A) H2O contg. bicarbonates and inorg. salts and (B) H2O-insol. org. solvents in the presence of tetramethylpiperidin-1-yloxyls I (R2 = H, alkyl, OR3, cyano, alkoxycarbonyl; R3 = H, alkyl, acyl) or tetramethylpyrrolidin-1-yloxyls II (R4 = H, alkyl, OR5, cyano, alkoxycarbonyl; R5 = H, alkyl, acyl). 4-Hydroxymethyltetrahydropyran was treated with I (R2 = MeO) in a mixt. of CH2CH2 and H2O contg. **NaOCl**, NaHCO3, and NaCl at room temp. 1 h to give 85.8% tetrahydropyran-4-carboxaldehyde, vs. 0.1%, when oxidized with NaBrO2 without NaCl.

IT **2226-96-2**
RL: CAT (Catalyst use); USES (Uses)
(prepn. and salting-out of O-contg. heterocyclecarbaldehydes by oxidn. of (hydroxymethyl)heterocycles with hypochlorites using N oxides as catalysts)

RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of α,β-unsatd. ketones from heterocyclecarbaldehydes and acetoacetate)
RN 7681-52-9 HCAPLUS
CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

Cl—OH

● Na

IC ICM C07D309-06
ICS B01J031-02; C07D307-12
ICA C07B061-00
CC 27-13 (Heterocyclic Compounds (One Hetero Atom))
IT 2154-37-2 2154-70-3 **2226-96-2** 2564-83-2 3229-53-6 38078-71-6 95407-69-5
RL: CAT (Catalyst use); USES (Uses)
(prepn. and salting-out of O-contg. heterocyclecarbaldehydes by oxidn. of (hydroxymethyl)heterocycles with hypochlorites using N oxides as catalysts)
IT 623-58-5, Sodium acetoacetate **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of α,β-unsatd. ketones from heterocyclecarbaldehydes and acetoacetate)

L46 ANSWER 37 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:482711 HCAPLUS
DOCUMENT NUMBER: 121:82711
TITLE: 3-(4-methylphenyl)-2-(ar)alkylpropanals, their preparation and fragrance application
INVENTOR(S): Kleemiss, Wolfgang; Kalz, Thomas
PATENT ASSIGNEE(S): Huels AG, Germany
SOURCE: Ger. Offen., 6 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

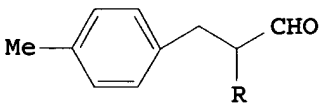
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

DE 4236887	A1	19940505	DE 1992-4236887	199210 31

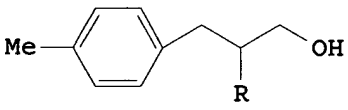
PRIORITY APPLN. INFO.: DE 1992-4236887 199210 31

OTHER SOURCE(S): MARPAT 121:82711

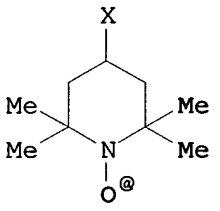
GI



I



II



III

AB The title compds. [I; R = (un)branched alkyl, (un)substituted C6-10 aryl, C7-10 arylaliph.] are prepd. in high yield by the oxidn. of phenylpropanols II with tetramethylpiperidine-N-oxyl derivs. III (X = H, OH) and org. solvents with **NaOCl** and NaHCO3.

IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of alkylpropanols in presence of sodium hydrogen carbonate and piperidine oxides)

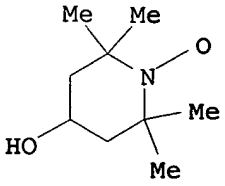
RN 7681-52-9 HCAPLUS

CN Hypochlorous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

IT **2226-96-2**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with alkylpropanals with **sodium hypochlorite** and sodium hydrogen carbonate)

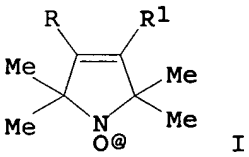
RN 2226-96-2 HCAPLUS

CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IC ICM C07C047-228
ICS C07C047-23; A61K007-46
ICA C07D211-94
CC 25-15 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 62
IT **7681-52-9, Sodium hypochlorite**
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of alkylpropanols in presence of sodium hydrogen carbonate and piperidine oxides)
IT **2226-96-2** 2564-83-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with alkylpropanals with **sodium hypochlorite** and sodium hydrogen carbonate)

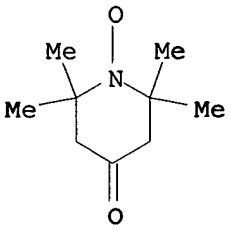
L46 ANSWER 38 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:442804 HCAPLUS
DOCUMENT NUMBER: 95:42804
TITLE: Unusual direction of the hypohalogenation of 4-oxo-2,2,6,6-tetramethylpiperidin-1-oxyl
AUTHOR(S): Chudinov, A. V.; Shole, V. D.; Rozantsev, E. G.
CORPORATE SOURCE: Inst. Khim. Fiz., Moscow, USSR
SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1981), (2), 476-7
CODEN: IASKA6; ISSN: 0002-3353
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 95:42804
GI



I

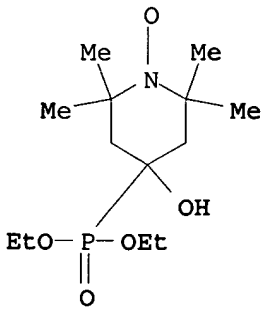
AB The title reaction with NaOBr in aq. MeOH gave pyrrolines I (R = Br, R1 = Br, CO2H) in a 64:36 ratio; I (R = Br, R1 = CO2Me) was also formed in 5% yield. With **NaOCl** the main product was 54% I (R = Cl, R1 = H); 3.7% I (R = H, R1 = CO2H) was also formed.
IT **2896-70-0**
RL: RCT (Reactant); RACT (Reactant or reagent)

(hypohalogenation of, unusual direction of)
RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)

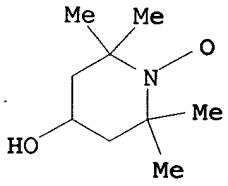


CC 27-10 (Heterocyclic Compounds (One Hetero Atom))
IT **2896-70-0**
RL: RCT (Reactant); RACT (Reactant or reagent)
(hypohalogenation of, unusual direction of)

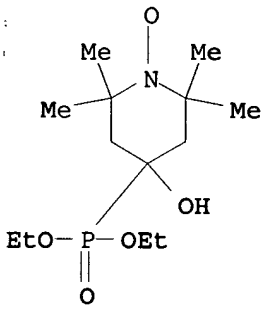
L46 ANSWER 39 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1973:57381 HCAPLUS
DOCUMENT NUMBER: 78:57381
TITLE: Quenching of singlet (1Δg) oxygen by 2,2,6,6-tetramethylpiperidine derivatives
AUTHOR(S): Bellus, Daniel; Lind, Hanns; Wyatt, John F.
CORPORATE SOURCE: Cent. Res. Plast. Addit. Div., Ciba-Geigy A.-G., Basel, Switz.
SOURCE: Journal of the Chemical Society, Chemical Communications (1972), (21), 1199-200
CODEN: JCCCAT; ISSN: 0022-4936
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB 2,2,6,6-Tetramethylpiperidine N-oxyls [I, R = O•, R1 = OH, R2 = H, P(O)(OEt)2] inhibited photooxidn. of Me2C:CHEt and 9,10-dimethoxymethylanthracene; I (R = R1 = H, R2 = H, OH) were ineffective and I (R = Me, R1 = H, R2 = H, OH) were demethylated. Singlet O was generated by sensitization with Rose Bengal, or from **NaOCl**-H2O2 for duplicate expts. using Me2C:CMe2 as substrate.
IT **36401-84-0**
RL: PRP (Properties)
(photooxygenation of 9,10-bis(methoxymethyl)anthracene and 2-methyl-2-pentene in presence of)
RN 36401-84-0 HCAPLUS
CN 1-Piperidinyloxy, 4-(diethoxyphosphinyl)-4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



IT **2226-96-2 36401-84-0**
RL: PRP (Properties)
(quenching of singlet oxygen by)
RN 2226-96-2 HCAPLUS
CN 1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



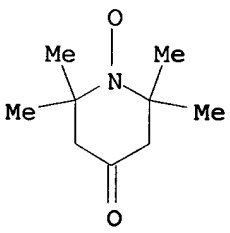
RN 36401-84-0 HCAPLUS
CN 1-Piperidinyloxy, 4-(diethoxyphosphinyl)-4-hydroxy-2,2,6,6-tetramethyl- (9CI) (CA INDEX NAME)



CC 22-4 (Physical Organic Chemistry)
IT 768-66-1 2403-89-6 **36401-84-0**
RL: PRP (Properties)
(photooxygenation of 9,10-bis(methoxymethyl)anthracene and 2-methyl-2-pentene in presence of)
IT **2226-96-2 36401-84-0**
RL: PRP (Properties)

(quenching of singlet oxygen by)

L46 ANSWER 40 OF 40 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:487453 HCAPLUS
DOCUMENT NUMBER: 77:87453
TITLE: Stable free radicals. X. Photolysis of hindered N-chloroamines
AUTHOR(S): Toda, Toshimasa; Mori, Eiko; Horiuchi, Hideo; Murayama, Keisuke
CORPORATE SOURCE: Cent. Res. Lab., Sankyo Co., Ltd., Tokyo, Japan
SOURCE: Bulletin of the Chemical Society of Japan (1972), 45(6), 1802-6
CODEN: BCSJA8; ISSN: 0009-2673
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB Photolysis of the hindered N-chloroamines, 1-chloro-2,2,6,6-tetramethyl-4-oxopiperidine (Ia), 1-chloro-2,2,6,6-tetramethylpiperidine (Ib), and 1-chloro-2,2,5,5-tetramethyl-4-oxoimidazolidine (Ic), in benzene soln. were carried out in an ESR spectrometer cavity. The ESR spectra of the corresponding amino radicals IIa, IIb, and IIc were observed in evacuated solns. In solns. contg. oxygen, amino radicals IIb and IIc readily reacted with oxygen to give the corresponding stable nitroxide radicals from the shapes of spectra and g-values. Amino radical IIa did not react with oxygen. Although the amino radicals could not be isolated, their formation was confirmed by the isolation of a coupling product with a benzyl radical generated from dibenzylmercury.
IT **2896-70-0**
RL: PRP (Properties)
(ESR of)
RN 2896-70-0 HCAPLUS
CN 1-Piperidinyloxy, 2,2,6,6-tetramethyl-4-oxo- (9CI) (CA INDEX NAME)



CC 22-4 (Physical Organic Chemistry)
IT 2564-83-2 **2896-70-0** 21485-42-7 38951-80-3
RL: PRP (Properties)
(ESR of)
IT 768-66-1 826-36-8 16256-42-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(chlorination of, by **sodium hypochlorite**)

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